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# A PLACE FOR LISBON IN EIGHTEENTH CENTURY EUROPE: Lisbon, London and Edinburgh, a town-planning comparative study

(vol. 1)

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Declaration

This thesis has been conceived and composed by the candidate.

Maria Helena da Cunha Murteira

## Contents

## APPENDIX (vol. 3)

# Acknowledgements

When preparing my Master thesis: *Lisboa da Restauração às Luzes* (*Lisbon from the Restoration to the Enlightenment*) I realised that it was vital to study Lisbon in a European context. In the seventeenth and eighteenth centuries, the concept of Europe as the leading cultural entity was developing and most of the primary sources suggested the need to compare Lisbon's growth with other major European cities, namely Paris and London.

Professor Rafael Moreira, of the *Universidade Nova de Lisboa* (New University of Lisbon), supported me in this purpose and drew my attention to the planning and building of the New Town of Edinburgh. Motivated by the potentialities of the subject, I submitted to the *Universidade Nova de Lisboa*, *Faculdade de Ciências Sociais e Humanas*, a PhD application which Professor Rafael Moreira kindly accepted to supervise. Again with his support and encouragement I transferred my PhD course to the Department of Architecture of the University of Edinburgh. To Professor Rafael Moreira I owe not only a consistent assistance throughout the whole PhD process but also one of its fundamental structuring lines.

Despite its unquestionable north European urban and architectural imprint, Edinburgh has a particular social and cultural atmosphere, which feels somehow familiar to south Europeans. In Edinburgh I found a second hometown and the best of the academic environments. I am very grateful to Professor Iain Boyd Whyte for his immediate support and for the providential decision to appoint John Lowrey as my supervisor. John Lowrey was a devoted and patient tutor, who was always available to help me with any kind of academic or scientific problem. Thanks to John Lowrey I was able to "discover" the New Town of Edinburgh and to direct my work to the study of the enlightened city as not only a concept but also as a pragmatic town-planning program. The vicissitudes of family life as a mother of three often made me despair of ever finishing this work. John Lowrey was always there to encourage me to proceed. This PhD thesis would have never been accomplished without his sympathetic assistance.

In the Department of Architecture of the University of Edinburgh, I also had the pleasure of meeting Mark Dorrian and to discuss with him Pombaline Lisbon, which he eventually visited with his students. His support and friendship were also very significant throughout my PhD course.

I am very grateful to the Calouste Gulbenkian Foundation in Lisbon and to the *Fundação para a Ciência e Tecnologia* (Science and Technology Foundation) for granting me scholarships which enabled me to carry out my research in Great Britain for more than four years. In this process, I ought to mention Pedro Tamen, who was at the time the Managing Director of the Fine Arts Department of the Calouste Gulbenkian Foundation and Manuel da Costa Cabral, Director of the Fine Arts Department and also Maria Lucília Alvoeiro, Deputy Director of the Fine Arts Department, for their support and

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To my father, I thank the invaluable guidance and the unyielding encouragement.

## ABSTRACT

From the incipient and occasional town planning solutions of the late medieval period, to the Renaissance model of the "ideal city", there was primarily a process of conceptualisation of the dream urban environment. Order and utility were the main premises conforming to the structuring of a rational approach to knowledge and to the organisation of societies. The Baroque period developed and put extensively into practise the above referred to town planning schemes. They were carried out according to a defined economic, social and political context. Ports and capital cities became major elements in the urban-network. Their impressive growth was the reflection of a fast evolving society. Architectural excellence and regular spatial layout became the main town planning premises. In the eighteenth century, these concepts evolved to architectural embellishment and public utility. Apart from the unquestionable symbolic character of architecture, there was also an emerging concern with more wide-ranging issues: the social dimension of town planning was gaining an increasing relevance. The Enlightenment looked at the city as a coherent urban unit, which should be able to supply to its citizens a favourable environment. The Enlightened city was an ideological statement, which only made sense by its practical implementation. It was a conceptual model that determined a precise and operative town planning program. Utopia was gradually turning into an attainable vision of the city. Pombaline Lisbon, the New Town of Edinburgh and London's West End are three specific, yet comparable, town planning situations. In the sixteenth and seventeenth centuries, as large and important European cities, Lisbon, Edinburgh and London underwent a parallel process of urban growth and urban planning. They were all confronted with uncontrolled and deficient building, sanitary problems, traffic congestion and criminality. In Lisbon, the political and military circumstances determined the structuring of a sober and pragmatic architectural and town planning trend. The military engineering directed and developed the latter. At the eve of the earthquake of the 1st November 1755, the military engineers possessed simultaneously the knowledge and the skills to set up a major town planning venture. They built a new city, which was designed to promote progress. The New Town of Edinburgh was born from two concomitant premises: the need to give to the middle class a suitable residential area and the desire to improve the city's image. The model was indisputably the Enlightened city. Pombaline Lisbon and the New Town of Edinburgh depict a low cost and efficient urban ensemble that was also able to enhance their image in an international context. London served unquestionably as an example, given the spacious and agreeable new West End squares. London's expansion was a major financial enterprise, which used established schemes of building procedures. The aim was to improve London's urban conditions, yet the drive was its financial benefit. London's main town-planning procedures suggested already a new urban context: the industrial city.

## Abbreviations

| | |
|---|---|
| AHCML | Arquivo Histórico da Câmara Municipal de Lisboa |
| AHE | Arquivo Histórico do Exército (Rio de Janeiro) |
| AHMOP | Arquivo Histórico do Ministério das Obras Públicas (Lisbon) |
| AHU | Arquivo Histórico Ultramarino (Lisbon) |
| BL | British Library (London) |
| BMP | Biblioteca Municipal do Porto (Oporto) |
| BN | Biblioteca Nacional (Lisbon) |
| CEMG | City of Edinburgh Museums and Galleries |
| DGEMN | Direcção Geral dos Edifícios e Monumentos Nacionais (Lisbon) |
| FCG - BA | Fundação Calouste Gulbenkian – Biblioteca de Arte (Lisbon) |
| GEAEM | Gabinete de Estudos Arqueológicos de Engenharia Militar (Lisbon) |
| IGP | Instituto Geográfico Português (Lisbon) |
| IST | Instituto Superior Técnico (Lisbon) |
| MC | Museu da Cidade (Lisbon) |
| MNAA | Museu Nacional de Arte Antiga (Lisbon) |
| RCAHMS/ NMRS | Royal Commission on the Ancient and Historical Monuments of Scotland/National Monuments Record of Scotland (Edinburgh) |

## List of Illustrations

Inscriptions in Portuguese and French: "Collecção de algumas ruínas de Lisboa causadas pelo Terremoto e pelo fogo do primeiro de Novemb.ro de 1775"

("Collection of some of Lisbon's ruins caused by the Earthquake and by the fire of the first of November 1755"). "Debuxadas na mesma cidade por M.M. Paris et Pedegache/E abertas ao boril em Paris por Jac. Ph. Le Bas" ("Drawn in the mentioned city by M.M. Paris and Pedegache/And opened with a burin in Paris by Jac. Ph. Le Bas").
Dims: 265x355mm and 285x365mm.
MC (Lisbon).

## Introduction – purpose and content

In early modern Europe, the phenomenon of urban development expressed better than any other factor the major changes taking place in society: the economic growth fuelled by the long distance trade; the social impact of the new enterprising activities; the political adjustment to the developing economic and social order.

Cities grew according to a dialectic process, which not only responded to political, economic and social demands but also shaped the significance of the latter.

The system of ideas, which was the conceptual framework of these fundamental changes, gained an increasing relevance throughout this period. It moulded political and scientific thought, artistic taste and promoted social reform programs.

The philosophical debate elected the urban phenomenon as one of its favourite issues: the division between the rural and the urban was gradually becoming more evident and the latter was developing a number of specific and complex rules of functioning.

Throughout the early modern period, European thought became aware of the need to control these vast and populated centres in all of their aspects. Town planning gradually evolved from a mere administrative and military exercise to a more comprehensive and multifaceted subject. To this end, the relationship between architecture and spatial design was reinforced, aiming for an urban environment that was at once more agreeable and yet functional. For the enlightened minds of the eighteenth century, both concepts represented two faces of the same coin.

The purpose of the present study is to attempt an approach to this subject in its two aspects: the city's conceptual framework and its practical application.

To this end, in the first part: "Towards a definition of an architectural and town planning ideology – a sketch of the enlightened city", the early modern city will be analysed according to the following premises:

. Origins and character of the urban phenomenon;

. The relationship between city growth and political and economic

development;

. The conceiving of an architectural and town planning ideology.

The aim is to establish a number of concepts in order to analyse the relationship between the development of the early modern European city and the structuring of town planning thought. Firstly, the long and extended debate regarding the definition of the city will be considered. This controversy is directly linked to the concurrent issues of the city's origins and the city's role in society. Should the city be understood as a conceptual element free from time and space parameters? Or, conversely, should it be regarded within a given historical context? In fact, from these two different viewpoints, is it possible to find an effective definition of the urban phenomenon? This debate has had the participation of different experts who have tried to analyse the city according to their own field of research. From Max Weber, Lewis Mumford, Henri Pirenne, Ferdinand Braudel to Leonardo Benevolo, the city has been studied and defined according to different perspectives, taking into account particular aspects of its structure. Whether considered from a social, economic or cultural and artistic point of view, the city has always been acknowledged as a complex and major component of society. This assertion is particularly accurate with regard to the seventeenth and eighteenth centuries given the city's role in the structuring of the modern period. Nevertheless, our object of study is the city's physical evolution: how it was devised and accomplished. To this end, the urban phenomenon will be examined within the boundaries of a specific civilisation and cultural context. Only this line of approach will allow a consistent comparative analysis of the architectural and urban history of the cities. Thus, this subject will be studied within the historical framework that shaped it.

Having established a conceptual context of analysis, the main premises, which led to urban growth throughout this period, will be considered. The relationship between the city's emergent role in society and the new material conditions of the city will be examined and discussed. The objective is to picture the early modern European city according both to its defining elements and to its contemporary concept. To this end, the new idea of the city will be considered in its economic, social and political context: the development of the long-distance trade; the emergence of the middle class and the creation of the capital city. The new symbolic and material attributions of the city simultaneously structured and were shaped by the development of thought. The new philosophical approach to society, which reinforced the idea of Man's individuality and autonomy, developed hand in hand with more challenging political, military and economic demands. Culture and art concurred to define and express the changes taking place in society. Architecture and town planning had a prominent role in this process: they staged the scenario of the new historical period. Therefore, their theoretical approach also gained an increasing significance and dimension. From the Renaissance to the Enlightenment period, a particular architectural and town-planning ideology was developed. The evolution of the idea of the city was

the *leitmotiv* of this process. The enlightened city will be studied as the ultimate expression of this movement. Its defining features and its contribution to the genesis of modern town planning will be analysed.

The relationship between the new idea of the city and its practical execution will be discussed in the second part: "Lisbon, London and Edinburgh: Three examples of town-planning". In fact, only the comparative study of the early modern architectural and urban projects can lead to an understanding of the process as a whole. As such, it will obviously assist the study of each town planning situation.

Pombaline Lisbon, which was built after the destruction caused by the Great Earthquake of 1755, is an important example of a project combining the main principles of the enlightened city. Its conceiving and implementation are simultaneously part of a national and a European historical process. Through a comparative analysis between the Pombaline project, London's development after the Great Fire and the Edinburgh New Town this study will try to find a place for Lisbon in early modern Europe.

In order to better structure this latter part, its first section will be devoted to a brief analysis of the Portuguese society at the time. The country's political, economic, cultural and artistic key defining elements will be presented within a European framework. Special attention will be given to the political, military and economic relationships between Portugal and Great Britain. Its relevance is not only connected to town planning matters but also to its important role in the structuring of seventeenth and eighteenth century Portuguese society. Finally, this study will present the fundamental traits of early modern Portuguese architectural and town planning history. Emphasis will be placed upon its relationship with political and military issues which led to the prominent role of military architecture, later structured as military engineering. Also, the responsibility and performance of the Crown, the city council and the private interests in the shaping of the Portuguese capital city will be briefly approached. The Portuguese empire and Lisbon will be considered as the main settings for the development of a particular town planning strategy that culminated in the Pombaline project.

The earthquake of 1755 will be analysed in its philosophical and material dimension. This catastrophe destroyed Lisbon's entire city centre, extensively damaging other city areas, and killed a considerable number of the Lisbon's citizens. Also, it was felt on a wide area around Lisbon. The extension of the tragedy was not only felt in Lisbon and in the other regions affected; the scale of the disaster astonished all Europe and therefore, it had a major impact on European enlightened thought. In fact, the Lisbon earthquake made the headlines of the European press and led to a widespread interest in the causes and consequences of such occurrences. These concerns were approached from a wide range of perspectives: philosophical, religious and

scientific. The extension of the damage will be examined according to the following sources: foreign accounts, particularly by the British residents, and Portuguese studies and records. Also, the philosophical and scientific repercussions of the catastrophe will be mentioned. Voltaire's works, namely *Candide ou l'Optimisme*, will deserve a special reference. With regard to the European reactions to the rebuilding of the Portuguese capital city, the information available is not as abundant and significant. However, the importance and dimension of this town planning enterprise caught the attention of a young Scottish architect, Robert Adam, who was at the time travelling in Italy. His ambition to be chosen as the architect of the new Lisbon will be considered within the context of both the city's architectural and town planning history and Adam's architectural taste and later works.

In the second section of this part, Pombaline Lisbon, the Edinburgh New Town and the urbanisation of London after 1666 will be compared as three fundamental and revealing town planning ventures. The links between the three situations will be considered not only *per se*, but also within the theoretical architectural and town planning framework in development since the Renaissance period. The urban history of each situation, which led to the mentioned town planning enterprises, will also be considered comparatively: main trends of development, urban legislation and royal, city council and private projects.

With regard to Lisbon, the theoretical and practical background, which allowed the conceiving of such an extensive town planning project, will be analysed in its more relevant aspects. This study will address in particular the emergent idea of the city, being developed since the late seventeenth century by the Portuguese military engineers and the concurrent project of Pombal, the all-powerful Portuguese Prime Minister, for Lisbon. Within this context, the importance of other European town planning experiences in the devising of Pombal's strategy will be considered. The work *Dissertação* (Dec. 1755/Feb. 1756) written by Manuel da Maia, the military engineer appointed to delineate a project for the rebuilding of Lisbon, represents the major source of information of the Pombaline project. It is unquestionably a fundamental piece of evidence of the Portuguese military engineering town planning experience and program. As such, it will be discussed and compared to the examples of London and Edinburgh.

Edinburgh's urban history and its political and cultural aspirations will serve as the structuring line of approach to the New Town plan. The *Proposals for carrying on certain Public Works in the City of Edinburgh* (1752), as the fundamental theoretical source of the project, will be compared to the Portuguese *Dissertação*. Their contemporaneousness and the similarity of some of their principles and solutions will be regarded as fundamental data.

London was often pictured as the paradigm of the enlightened city. It was mainly seen as a fine example of the desired balance between architectural form and urban commodiousness. In other words, it was regarded as the city better equipped for the development of an advanced and enterprising society. As such, it will serve as a fundamental element of comparison in the present study. London's urban development from the late fifteenth century will be briefly mentioned in order to better place the major legal effort of the city's rebuilding after 1666. Within this context, the different components of the architectural and town planning strategy, which gave structure to the urbanisation of the West End, will be emphasised.

Finally, these three examples will be compared according to the following main defining aspects: aims and significance; attribution and authorship of the projects; architectural and town planning solutions and legal and financial procedures. By establishing the links and acknowledging the differences, this study will try to outline a conceptual framework for city-making in Enlightenment Europe.

# PART I - TOWARDS A DEFINITION OF AN ARCHITECTURAL AND URBAN PLANNING IDEOLOGY - A *SKETCH* OF THE ENLIGHTENED CITY

The main purpose of this chapter is to define a framework for the European town planning movement of the second half of the eighteenth century. To this end, urban growth in pre-modern Europe will be considered in connection with the fundamental ideas and models which regulated it since the beginning of the sixteenth century. Capital cities, which represent distinctive urban models and an expressive example of the significance of urban development at the time, will serve as the main structuring elements of the present analysis.

When discussing any aspect of the history of cities or of the development of town planning it is crucial to clarify which concepts we are using with regard to both the city and urban planning thought. Much has been written about these two subjects and it is not easy to find a brief but accurate definition of them both. Nonetheless, it is always possible to enunciate a certain number of ideas we deem to be fundamental for structuring the analysis.

## 1- In search of a definition of the city[1]

Most of the approaches to a "theory of the city" fail by overestimating a single aspect of the urban cosmos: its political, social or economic structures.

History, Geography and Sociology have approached the urban phenomenon under various perspectives. From Marx to Henry Pirenne, a stream of authors tried to define the city essentially from an economic point of view. On the other hand, sociologists and urban historians have tended to focus mainly on the social character of urban centres. This discussion has produced various explanations of the city based on postulates as diverse as Weber's assertion that the different aspects of the urban element should be considered separately (1), and as Braudel's generalisation that "a town is a town wherever it is" (2).

The concept of the city has been discussed in connection with the city's origins in the firmly held belief that the answer to the latter issue will decisively

[1] Notes p.52

lead to the definition of the former. Thus, the city has been mainly analysed as an independent phenomenon: "In comparing, comparing, comparing, I have searched for similarities over space and time" (3).

The fruitless outcome of this debate has led some authors to refuse to discuss the city as a distinctive entity: "(...) in an important analytical sense the city is not a social entity; (...) we have been victims of the fallacy of misplaced concreteness in treating it as such; (...) one object of urban history and urban sociology now might be to get rid of the concept of the town" (4). This seems quite a radical opinion. On the contrary, the urban phenomenon can only be understood within a specific social context.

The search for an operative definition of the city has today two principal applications:

- The study of the various aspects of the city throughout History and its role in the evolution of civilisations and societies;
- The development of urbanism as a scientific subject.

The extensive process of urbanisation, which characterises the industrial era, and the subsequent primacy of the city in modern societies have led some sociologists to consider the city using only an industrial and capitalist framework. Population density and urban culture are the elements used by these authors to reach a definition of the city (5). Thus, the city is presented following contemporary references, which will, inevitably, create a fracture between what is considered to be an urban centre in industrial and pre-industrial societies.

Far from Braudel's assertion that "the ideal would be to define the town in itself, outside the economy or civilisation containing it" (6), it is fundamental to study the city in context. In fact, it is essential to consider the place of the city in society and the relationships that it develops with the rest of the territory to which it belongs. The analysis of the historical development of societies focusing on the structure of their internal systems can provide the essential clues for the studying of the urban phenomenon. The city cannot be considered as a social, economic or political entity with a life detached from the society that created it.

Cities are a clear expression of the various civilisations. They are the *physical reflection* of the peak of development of the economic and social systems to which they belong. Equally, their own evolution expresses the political path of

the society where they are implanted. Even if we consider the early medieval period, when cities clearly had lost their ancient prominence in society and therefore were losing their old physical attributions, we are only in the presence of a social and economic adjustment to a new political order. Thus, cities were, once more, the expression of the changing times.

The old discussion regarding the conveniences and inconveniences of cities and their parasitic dimension, whose origins we can trace far back in History (7), is nothing more than a discussion about the most controversial aspect of the development of societies: unbalance and disproportion. Cities are not tumours growing on social tissue, they represent the complexity of the development of political, economic, social and cultural systems. As Castells stresses, the study of the city ought to be based on the analysis of the relationships between space and society throughout History (8).

Architectural historians have been considering the physical expression of the urban phenomenon. Leonardo Benevolo states that: "A city's physical form derives from a complex combination of geographical and historical factors; its various aspects constitute an array still more varied than that presented by those economic, social and cultural events, more easily traced to established conceptual categories" (9).

Nonetheless, any analysis of the city's architectural component or urban planning history needs to consider in conclusion their social, economic and political significance. Quoting J. Bird once more: "The city must be studied ultimately in terms of its function not in terms of its form, which nevertheless may give useful evidence" (10).

Moulded by political, economic, social and cultural elements and materialised by architectural forms, the cities are, overall, living entities: "As a system of life, the city penetrates the structure of biological evolution itself, creating new urban-insect and urban-animal forms" (11). By setting up a specific way of living the city has a fundamental influence over human behaviour. On the other hand, urban forms are created following the citizens' needs and aspirations as a community or a politically organised structure.

Cities ought to be considered in all of their aspects, as total and complex systems. The search for a prominent aspect of their structure in order to find a link between cities throughout history can lead to a reduction in their importance and complexity.

Nonetheless, cities are not "heterogeneous entities", systems which cannot be the object of a comparative study. As long as cities are the products of comparable social-economic systems and are shaped upon similar philosophical and cultural premises, their urban creations are susceptible to a comparative study using the same analytical tools. Capital cities in seventeenth and eighteenth-century Europe can be studied under this perspective. Quoting once more Leonardo Benevolo: "The Europe that interests us is not a geographical region but a historically determined reality" (12).

Having established a method of analysis rather than a definite formula to identify our object of study, urban growth in pre-modern Europe will be now considered. Urbanisation trends (and characteristics) will be analysed as a fundamental aspect of the idea of city throughout this period.

## 2 - Urban growth: Ports and Capital Cities[2]

The analysis of European urban growth from the sixteenth to the eighteenth century is essential to understand the elements which shaped the creation and the development of cities throughout this period. In this resides the importance of this subject for the present study.

From the sixteenth century to the eighteenth century, Europe experienced an accelerated movement of urban growth. Cities had spread in Europe long before this period; nonetheless the sixteenth century marks the beginning of a different urban phenomenon: the fast increase of the size and population of some of these cities. Although this process did not show a constant and uniform progress, it expressed a steady economic and social transformation which was taking place in the European world.

One of the most important forces behind this phenomenon was the development of the maritime trade. Trade and urban development have always been closely linked and this link was especially important in the period under consideration. Despite all the controversy concerning the relationship between trade and the origins and the evolution of cities, its fundamental role in urban growth cannot be diminished. It is tempting to quote once more Braudel who states, perhaps too emphatically, that: "every town, wherever it may be, is first and foremost a market" (1).

[2] Notes p. 52

The development of trade launched the foundation of the national markets which represented a serious blow to the regional self-sufficient economic system of early medieval Europe. The trade net was often supported physically by urban growth. Europe's expansion to other parts of the world was fuelled by the consequences of the impact of trade and all of the activities that came with it on the rural-based economy. The European maritime enterprises into the newly discovered world boosted the development of long-distance trade which, once again, stimulated urban growth. This was the case of Portugal and Spain in the sixteenth century and it also explains most of the urban development of northern and western Europe in the two following centuries.

De Vries' figures for numbers of inhabitants in European cities from 1500 to 1800, reveal, first of all, that trade centres, namely maritime ports, saw a substantial boost throughout this period (2).

In 1500, Paris, Milan, Venice and Naples were the only cities with 100,000 inhabitants or more; Lyon, Rome, Genoa, Palermo, Bologna, Florence and Granada followed the first group with 50,000 to 99,999. Of the twelve examples considered, nine were Italian cities. Venice, Genoa, Palermo and Naples were important maritime ports; Paris, the largest European city, and Milan, the largest Italian urban centre, maintained their status acquired since 1400; the importance of Rome was inextricably linked to the Papal power; Granada's importance was connected to its central role in the Muslim kingdom of Granada which had recently been conquered by the Spanish Catholic Sovereigns; Florence and Lyon were important cultural and trade centres.

One century later, the group of the largest cities includes also London, Rome, Palermo and Lisbon; to the other group are added Amsterdam, Brussels, Danzig, Rouen, Messina, Toledo and Seville. Lyon had fallen to the group of 40,000 to 49,999 inhabitants. Long-distance trade plays an important part in this phenomenon: London, Palermo and Lisbon's urban growth in this period is closely connected to their role as centres of a maritime trade network. The same can be applied to Amsterdam, Danzig, Messina, Rouen and Seville. Apart from being a regional capital, Rouen's situation, near the coast and on the side of the river Seine, provided an important link between Paris and the sea. Clearly, maritime trade was already an element of urban growth.

According to the same data, in 1700, the largest cities were: London, Amsterdam, Paris, Milan, Venice, Rome, Naples, Palermo, Madrid, Lisbon and Vienna. Growing fast, with 50,000 to 99,999 inhabitants we can count

Copenhagen, Dublin, Leiden, Lille, Berlin, Hamburg, Bordeaux, Marseilles and Valencia to add to the existing group of Rouen, Genoa, Bologna, Firenze, Brussels, Danzig, Granada and Seville (Lyon and Antwerp seem to shift between the range of 40,000 to 49,999 to the range of 50,000 to 99,999 inhabitants, from 1500 to 1700. In the case of Antwerp this was clearly a reflection of the devastation provoked by the Spanish political and military dominance in the Netherlands during the sixteenth century). Thus, at the beginning of the eighteenth century, the largest European cities were mainly important maritime ports or fluvial ports connecting extensive areas to the sea.

By 1800, the group of the largest European cities had grown. It included: London, Copenhagen, Dublin, Amsterdam, Lyon, Paris, Rome, Milan, Venice, Naples, Palermo, Barcelona, Berlin, Hamburg, Madrid, Lisbon and Vienna. To the range of the cities with 50,000 to 99,999 inhabitants were added mainly port centres and the new industrialised British cities. With the exception of Lyon and Milan, which were important trade centres, the most populated cities in Europe were either capital cities, important ports or both.

These data clearly point out the importance of trade centres, namely port centres, in seventeenth and eighteenth century Europe. This fact is closely connected to the new mercantilist ideas which flourished throughout the seventeenth century and that shaped European economy until the mid-eighteenth century.

The bulk of towns, which had spread through Europe before 1300, remained small in size. Market centres represent, clearly, the dominant and most populous group. The increasing importance of maritime trade in the European economy will, nevertheless, condemn some to a progressive decay. As Paul Hohenberg and Lynn Hees stress: "(...) ports gained at the expense of other markets, maritime ones even more than those on inland waterways. Second, the degree of specialization in trade increased: by 1600 one third of English and Welsh market towns concentrate on a particular product" (3).

The analysis of this data indicates that urban growth during this period ought to be regarded in the light of the powerful economic force that long-distance trade represented at the time. We are in the presence of a centralisation of urban growth, rather than an extended urbanisation process. The trade net gradually developed through Europe having ports, especially maritime ports, as support and dynamic structures: "... a limited number of ports actually directed the expansion" - "As a group, they constituted the core of a powerful, Europe-centered trading network whose outposts spanned the world and

through which, via overseas gateways, were funneled the plunder and the produce of vast regions" (4).

Nevertheless, the evolution of cities in this period cannot be regarded solely from an economic point of view. Urban development in Europe throughout this period was also connected with the political adjustment of some European countries to the new horizons opened by the economic and social transformations: "The great political creation of the XVII century was the National State, whose characteristic form is the absolutist monarchy. Pre-modern Europe appears then as a system of States searching for a balance between their political and economic forces" (5).

The onset of the royal absolutism, as the political expression of the pre-modern European States, required the use of certain cities as the headquarters of the new political power. These urban centres - the capital cities - would physically represent the new attributions and significance of the royal sovereignty. A spatial and architectural adjustment to the new status and size of these cities was demanded.

Cities, namely capital cities, were transformed and created in order to serve the emergent political order. Not only did their role in society change but also their spatiality was rearranged in conformity with a new idea of the city. State dominated this process, and within each political territory a new system of cities developed according to the hierarchy imposed by the creation of the capital city. Thus, the centralisation of political power changed, profoundly, the role of the city in society: its medieval attributes of total or relative autonomy were, in great measure, lost and urban space was rearranged in order to respond to the new physical and symbolic demands of the absolutist power. These moulded their political and administrative functions: administration and government were often separated from the residential palaces. To residential cities and provincial cities were given a specific place in the urban hierarchy within each state.

The capital city, as defined by Giulio Argan, is mainly represented by the examples of Rome and Paris and is addressed, overall, to the new symbolical and representative attributes of these urban centres. The capital city would represent, therefore, the peak of the urban development of a given society and could be spatially and architecturally defined as following solutions of urban regularity and uniformity in opposition with the labyrinthine maze inherited from the medieval period.

Argan explains the path followed by the baroque in the spatial redefinition of the capital cities: the new urban projects were developed around the formula street/plaza, the architecture representing the force, which gave balance and dynamism to the whole. As Lewis Mumford states: "the avenue was the most important symbol and main fact about the baroque city" and space was rearranged around this new urban element (6). These projects were mainly directed to the representative character of the capital city as the centre of the political absolutism and the stage where its ceremonies were performed.

The capital cities expressed changing and revolutionary times, but also acted as a generator of most of these events. Their increasing political, economic, social, cultural and religious power and influence, determined the rhythm of the evolution of each country. This dialectic process created the foundations of modern states and paved the way to the industrialised world:

"These towns (...) represented enormous expenditure. Their economy was only balanced by outside resources: others had to pay for their luxury. (...) The answer is that they produced the modern states, an enormous task requiring an enormous effort. They produced the national markets, without which the modern state would be a pure fiction" (7).

The more centralised the state was, the more populated its capital city tended to be. Braudel stresses this fact adding the vastness of the territory to the equation (8). Nevertheless, the former element when in combination with a central economic role was sufficient for the creation of a city of gigantic proportions. This phenomenon clearly affected small countries like Portugal.

In fact, from the seventeenth century, political centralism and port functions contributed decisively for the formation of cities of great size. Nevertheless, the latter element was *per se* responsible for another phenomenon: the extension of a city's influence outside its own territory. In order to understand European city growth throughout this period it is essential to understand the nature of economic development at the time. Political power was mainly adjusted to the new economic order. The growth and role of the early modern city expressed already the genesis of the dual character economy would have in future: nationalism and globalization. As Sutcliffe notes: "This Atlantic network of giant cities and other large trading promoted the megalopolis as one component of a network rather than as the core of a concentric system within a single territory" (9).

Despite the gigantic development of some of these cities, as a whole or in comparison with the rest of their territories, and the parasitic force that they

represented inside the pre-capitalist societies, they could offer the answers to some of the most fundamental social questions posed by economic evolution (and revolution) in eighteenth century Europe. As stated above, this rapid urban growth can be defined more as a physical accommodation to a new economic and social system (with all its unbalances and disproportions) rather than simply as a freak expansion with uncontrolled consequences. Quoting once again Braudel: "... the capitals of the *ancien régime* were not aberrant phenomena. They sprang naturally from the institutions of their times" (10).

Since classical Rome, this period was the first historical moment when European cities were developed and created with the ability to generate values and forces influencing vast areas of territory and whole societies. Political power and overall economic pre-eminence were the main forces behind this phenomenon whose origins can be traced to the late medieval period: "In the big Kingdoms of France, England and Spain [we can add the example of Portugal], cities emerged as centres of royal residence, court attendance, government, legal machinery and military concentration. Financed by taxation, rent and feudal dues levied by nobility these cities were huge concentrations of consumption and of employment. In addition, they attracted merchants and financiers who served the vocation demands of the giant city" (11).

Capital cities and trade centres shared these attributes since the sixteenth century. They can be recognised in some Italian cities, such as Venice, Naples and Milan, as well as Paris, as early as 1500, with London and Lisbon clearly developing quickly, reaching the category of the cities of more than 100,000 inhabitants in 1600 (12).

National states controlled vast areas overseas, which were added to their own territories and long-distance trade maintained and extended their supremacy. The study of the major cities is essential to understand seventeenth and eighteenth century urban movement and also European society at the time: "Their great size means that they draw on the productive capacities of very wide areas, and they therefore reflect the economic and social systems of entire civilisations. In this way, the history of the giant cities is the history of the world" (13).

London represents the best example of a *mega*-city in eighteenth-century Europe: this capital city managed to support, as a market and a financier, a significant proportion of the powerful economic growth known as the *industrial revolution* and, at the same time, controlled politically an Empire and

managed the flourishing trade that it provided extending its economic influence outside its boundaries. In fact, British commerce prevailed in Europe and in the European colonies overseas from the late seventeenth century onwards, taking over from a leadership that had been Portuguese in the early sixteenth century.

The relationship between urbanisation and industrial revolution is a controversial subject, as both phenomena did not always coincide geographically. It is not our intention to add to this debate as it deserves a serious and deep analysis and is outside our field of study. However, there is no doubt that the existence of large cities is essential for industrial development as they represent huge centres of consumption, financial markets and the privileged suppliers of technical improvements. As Paul Bairoch states: "Urbanisation as a socio-economic phenomena has certainly contributed to the eclosion of the industrial revolution, and to its international diffusion" (14). It will be interesting to analyse the connection between these two phenomena taking into account the importance of large urban centres in the development of national markets. It seems that more than a mere "spectator" of all the process of industrialisation, London had established the means for the survival and spreading of the new economic order (15).

Some authors highlight the level of urbanisation of each country according to demographic factors and disregard the importance of the link between urbanisation and industrialisation. Also, the fact that industrialization in England was only possible after an agricultural revolution and that it started off in the countryside rather than in the major cities has led researchers to consider urbanisation and industrialization as two independent events: "For a long time, disregarding the rest, we believed that urbanisation was combined with industrialisation. The two processes only formed the joint partners of modernity after an autonomous launch" (16).

The study of industrialization needs to be addressed in a more global way and the specific economic, social and cultural role of the most active urban centres in every country as well as the nature of the urban network that they were able to create should be the main elements to be considered. In fact, the major urban centres were at the same time dynamic engines of economic growth and development as well as the main focus of cultural, scientific and technological production. They were able to extend a powerful net of information which contributed decisively to the flourishing and evolution of ideas throughout Europe.

Great Britain represented, in the eighteenth century, the economic *avant-garde* of the process of transformation which European society would be experiencing until the beginning of the twentieth century. Politically, Great Britain had conducted the movement much earlier than other European states with the establishment of the principle of Parliamentary supremacy in the seventeenth century. The French Revolution only signified the beginning of the end of an era for the rest of Europe. However, is also important to understand the role of the Netherlands in this process. From the early sixteenth century, an increasingly strong and enterprising Dutch middle class (to which extensively contributed the Iberian Jews who took shelter in Holland) allowed the set-up of a society opened to innovation and modernization. The political, economic, cultural and religious context of the Netherlands was, therefore, a source of inspiration for other countries searching for a breakthrough from *ancien-régime* structures: "It was also in seventeenth-century commercial Holland, refuge of Iberian Jews (amongst whom we find the Portuguese new-christian [forced to be converted to Christianism] Uriel da Costa – who, at the beginning of the seventeenth century, denied the immortality of the soul), French Huguenots, English dissidents, that were blended most of the innovations ... that ... would serve as the principal gospel of the scattering of eighteenth-century enlightened ideas" (17).

Europe developed to different rhythms if we consider the various countries and their political, social and economic evolution. However, as a whole, it was steadily moving towards a new order: the industrial society.

Italian trade centres, followed by Portugal and Spain led the way. They were the first territories to spread their political or economic influence (or both in the case of Portugal and Spain) outside the boundaries of Europe. As leaders they were left behind by the maintenance of a traditional social structure which was mainly supported by their cultural and religious options. In fact, they were unable to assimilate and, overall, accept, the revolutionary consequences of the movement they had initiated. This role was given to the countries which, for their specific political, social, cultural and religious history, had more to gain from a deeper change. Portugal and Spain initiated a process of expansion overseas within a medieval framework. Portugal turned, in the second half of the fifteenth century, to a more commercial enterprise controlled by a centralized monarchy. However, this economic strategy developed always within the confines of a social structure based in privilege and landed property. The territorial expansion for Spain, and its resulting trade, and the traffic of spices and silk from India, and gold from Africa, and later of the precious metals coming from Brazil, in the case of Portugal, gave to both kingdoms the opportunity to boost a fragile economy. Nevertheless, Portugal and Spain's expansion and commercial enterprises were never able

to gain autonomy from a very centralised and repressive political and religious context as this fact did not allow the formation of an autonomous and active middle class (18).

The same cannot be applied to the Netherlands and England, which initiated their territorial expansion and long-distance commercial activity within a very different political, social and religious framework. Religious Reform played a fundamental role in this process as it favoured a different political and social approach to the economic development in these two countries. France is again another study case: despite a very centralised political system, the role of religion was never as repressive as in the Iberian states. Therefore, this country was able to develop an extensive trade net and an important system of manufactures, which supported the industrialisation process in the nineteenth century. Nonetheless, the whole movement towards the new industrial order can be analysed globally, as a European enterprise that knew different stages of evolution and significance.

The development of the concept of the capital city and its role in European society was, therefore, a path also unevenly followed by the main European cities. When analysing pre-modern Europe, it is always important to retain the political fracture existing between Great Britain and the rest of the European countries (excluding the Netherlands) since the seventeenth century and equally the powerful economic force that Great Britain represented in the eighteenth century.

Urban development in Europe was profoundly influenced by these factors. The artistic and cultural movement in the seventeenth and eighteenth centuries "travelled" around Europe following similar trends of thought but was, nonetheless, adjusted to particular political, economic and social situations.

The separation between pre-industrial and industrial cities according to Sjoberg's theory does not allow a clear understanding of the pre-modern urban movement. Sjoberg states that: "Similar in many facets of their ecology, as well as in their class, familial, economic, political, religious and educational structures they [the pre-industrial cities] differ dramatically from industrial cities and societies" (19). The early modern town is by definition the product of a transitional historical period and it is placed, as a prototype, between the medieval city and the industrial city. However, the early modern city, whatever its specific function and statute, is not only part of a whole process of urbanisation, with some defining characteristics, but it also comprehends different stages of urban evolution and planning. It reflects a society in

profound change and as an urban phenomenon cannot be artificially separated from the industrial period that follows.

Renaissance, baroque or neo-classical cities are designations based in architectural and ideological options that hide political, economic and social issues. It is important to study the architectural and urban planning movement in context to understand its real importance in the seventeenth and eighteenth-century Europe. The living and lived city is the object of the present study. To this end, in the following chapter, urban development and town planning will be analysed in pre-modern Europe and their importance in the definition of what we may call the *proto*-industrial city, in other words: the transitional city.

## 3- Town planning in pre-modern Europe

### 3.1- Town planning as a concept[3]

The study of urban development in seventeenth and eighteenth century Europe reveals the onset of a structured and planned urban movement. In order to understand this phenomenon it is essential to clarify what town planning represents in this specific period.

"There is no general agreement about the scope or content of town planning. In its narrowest sense, it has been regarded as primarily an aesthetic subject, as an extension of the art of architecture... Others have sought to stress that town planning is a means of increasing not only social well-being but also economic prosperity..." (1). Town planning has developed according to the city's own evolution. Overall, it expresses society's super-structural approach to urban systems throughout history. Thus, more than an "aesthetic subject" or an "extension of architecture", town planning represents a way of balancing these factors with an environment favourable to the social, economic and political demands of a given time.

It is very difficult to establish a beginning to town planning as a defined subject without using contemporary concepts of urban intervention. The development of the industrial city, throughout the nineteenth century, posed several social and environmental problems. These were addressed as part of a wider political and social program following different ideological approaches. The fast evolution of the industrial society and the dramatic changes that

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cities, all over the industrialised world, were undergoing since the beginning of the century, led to the maturing of this movement, which acquired a scientific structure. At the end of the nineteenth century, the path was opened for the emergence of the concept of urbanism. Therefore, town planning as "the science and building technique and ordering of the human settlements, cities and villages" (2) or as "the programs pursued in most industrialized countries in an attempt to achieve certain social and economic objectives..." (3) appears only at the beginning of the twentieth century: "This was no easy matter, for it required a specific combination of intellectual perception and practical activity which was achieved nowhere in the early stages of the industrialization process" (4).

In fact, what defines modern town planning, as Françoise Choay points out, is its scientific and operative dual character, which requires the use of a specific body of experts: "Instead of being the work of generalists (historians, economists or politicians), it is under its two forms, theoretical and practical, the excellence of *specialists*, usually of architects. (...) Instead of being circumscribed to the utopia, urbanism assigns to its technicians a practical task" (5).

Only the twentieth century was able to structure town planning as an independent subject with its specific body of rules and experts. As a result, town planning is today a priority task for every city's administration. However, town planning knows a much longer process of maturing and was present in the daily urban life in different ways, served by various types of institutions, throughout History - "In fact, urbanism understood in its more trivial and concrete sense, consists in the organisation of the city space, in maintaining, improving and managing it" (6).

As Sutcliffe states, the consciousness of planning was a necessary condition for the "invention" of town planning and only the twentieth century was mentally and technically equipped to develop such a discipline (7). Nevertheless, we can trace its origins far back in time. The scientific approach to town planning, which is an attribute of contemporary urbanism had also a long history of evolving which started long before the nineteenth century. This century developed and matured an approach to urban issues that had already been addressed in the pre-modern period. In fact, the conscience or "intellectual perception" is behind most of the main urban interventions carried out in *ancient régime* Europe - the principles and methods were, nonetheless, different.

Also, the duality between *utopia* and *praxis* has been a constant element of town planning throughout history. The Renaissance period marks the beginning of a process of urban development and intervention that was extremely influenced by this dual approach. The intervention of military engineering on urban settings is the best example of this reality.

*Utopia* and *praxis* are still part of the town planning process today. The twentieth century witnessed some of the most important moments of urban creation following explicit utopian projects, born not only in a democratic context, such as Le Corbusier's Modernist proposals (and the building of Brasilia in Brazil), but also in dictatorial systems. In this latter group, we can include the architectural creations of the National Socialism in Germany, of Stalinism in the Soviet Union, of fascism in Italy and of the *Estado Novo* in Portugal. The physical urban setting served once more ideological values and political options. Modern urban projects can seldom have only an architectural and social impact. It is, in fact, difficult to accept, in its value, the assertion that: "While pre-urbanism was linked to political options throughout its history, urbanism is non political" (8).

Town planning develops between *utopia* and practical intervention. It follows trends and fashions and, most of all, responds to the main demands of societies in given historical periods. In fact, urban planning is conditioned by a specific idea of the city. Urbanisation develops as a result of social, economic and political demands but has an impact on the cultural and artistic movement. Both phenomena interact, resulting in a defined concept of the city, which, to some extent, regulate urban intervention. The contrast between the dream city and the real city reflects the tensions within each society: the pursuit of an ideal social, economic and political structure.

Urbanism is, overall, the result of a scientific systematisation of a long process of urban intervention, which started defining its own boundaries since the eighteenth century. It is the existence of a specific *corpus* of urban legislation served by a body of experts that better characterises contemporary town planning.

The Enlightenment period represents the beginning of the new era for town planning. The second half of the eighteenth century profited from the maturing of a new concept of the city which had its origins in the Renaissance period. Also, the emergent economic order started to shake the structure of the pre-modern city, especially in Great Britain. These two elements were responsible for the beginning of a conscious approach to the social problems posed by urban growth: "Circulation, embellishment, hygiene came to

constitute the three virtues of a new or a renewed city: one leitmotiv which will not be quickly forgotten by the urban administration and founded, undoubtedly, from a distance, the transformation of the urban art in urbanism" (9).

Thus, in order to analyse and identify the main ideas which regulated town planning in the eighteenth century it is essential to understand how the idea of the city developed in Europe since the sixteenth century.

## 3.2 - Utopia and *Praxis* - the Renaissance and the Baroque approach to the city

### 3.2.1 – The ideal city[4]

The increasing importance of trade, boosted from the fifteenth century by the European expansion overseas, was undermining medieval economic structures and underlining the importance of Man's initiative and autonomy in a world that had been believed to function solely according to a divine order. Humanism represented, ultimately, the awakening of the importance of the role of Man in the evolution of societies. Based on the classical learning as opposed to the medieval approach to knowledge (the scholastic philosophy and the Christian religious structure and system of values and beliefs which characterised the period), the new secular culture was, however, always maintained within a religious framework.

Humanists considered Man as an autonomous entity, able to improve according to his own will. To this end, they privileged the analysis of the relationship between Man and his environment, both according to a cosmic and a social dimension. Nevertheless, their final purpose was the search for the true meaning of human life in a Christian world. Therefore, to some extent, not only the Reformation but also the Counter-Reformation (despite its reactive and conservative character) can be considered as products of this trend of thought: they both expressed the search for an ideal balance between the material and the ethical and religious values of European society at the time.

The progressive centralisation of political power and the religious conflicts of the early sixteenth century were elements of the same equation, different

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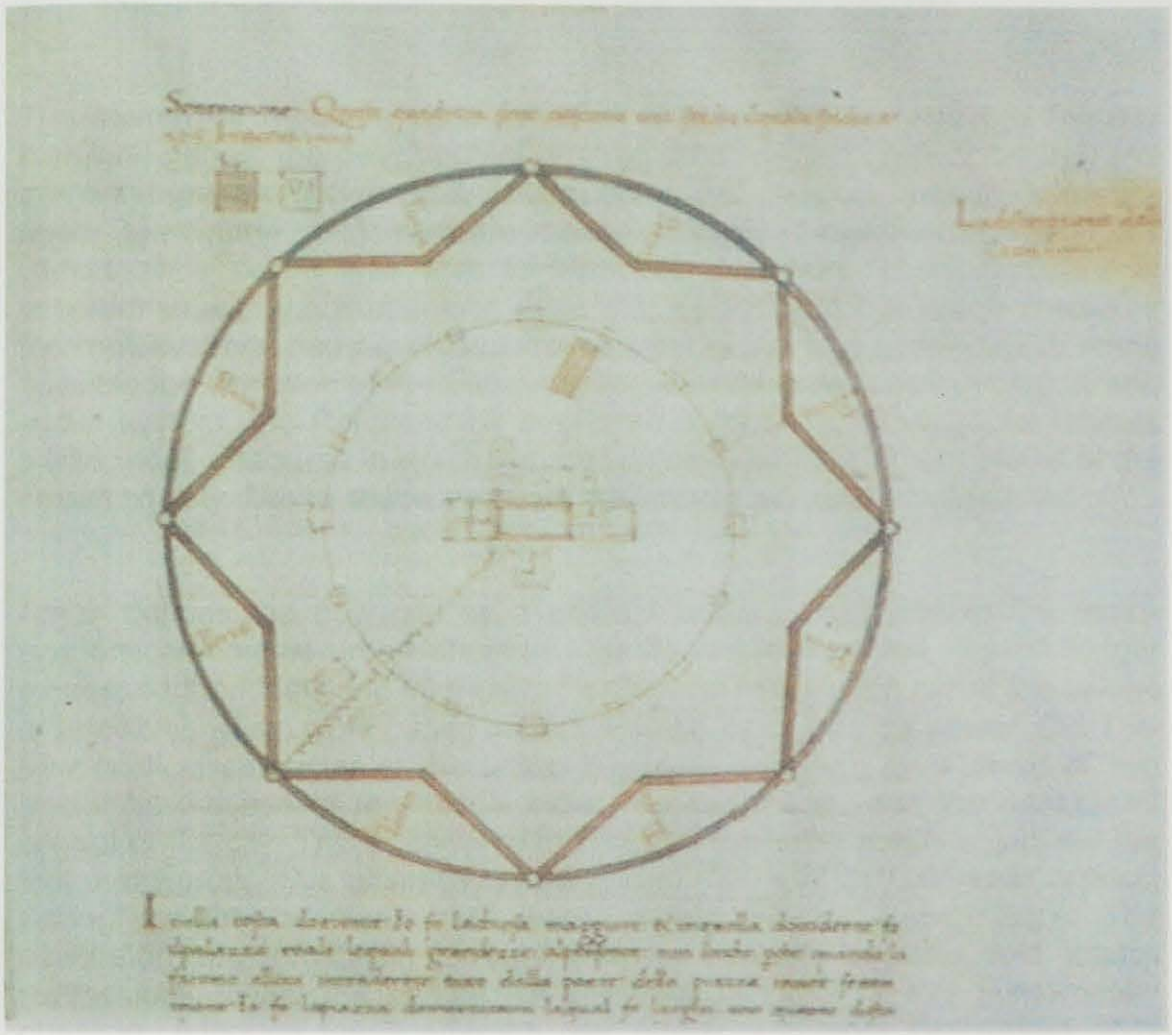
faces of the same coin: they expressed the search for a controlled and well defined framework for European economic and social evolution. Humanistic thought opened the way, thus, to different approaches to the emergent new order. The new political and religious ideas moulded the way Europe dealt with economic development and social changes in the seventeenth and eighteenth centuries and structured specific cultural and artistic frameworks.

Overall, Humanists began a conceptual search for an ideal society with the city considered as its most perfect representation. Reshaping and reorganising cities meant restructuring societies. Whatever the final purpose of these theories, they were based on a new idea of the city; they aimed for a new physical dimension of the urban space.

The city reflected the new concept of society structured around the idea of Man as the centre of the Universe. "Ideal cities" did not solely represent a geometrical approach to the urban space. The "ideal city", as a concept, was expressed as a self-contained social structure, a micro-cosmos aiming to serve as model for the development of societies: "This form and fashion of a weal-public, which I would gladly wish unto all nations, I am glad yet that it hath chanced to be Utopians, which have followed those institutions of life whereby they have laid such foundations of their commonwealth as shall continue and last not only wealthly, but also, as far as man's wit may judge and conjecture, shall endure forever" (1). Thomas More's text (b. 1478-d.1535) – *Utopia* (1515) - gave the name to a concept that was materialised through various models serving different purposes: political and philosophical, architectural and technical. Nevertheless, the concept, as a whole, represents a new vision of the world and, as a result, of the role given to the city in this historical period.

The production of architectural and town planning treatises in the Renaissance gave the theoretical framework to the physical form of the new city. They combined geometric designs and the formal glossary of classical architecture as a means to generate the spatiality of the "ideal city". These works were mainly directed to the military issue of town defences. Nevertheless, some, as Filarete's Sforzinda (b.1461 - d. 1464) (**Illustration 1**), and Dürer's treatise (b. 1471 - d.1528), published in 1527 (*Etliche Underricht, zu Befestigung der Stett, Schlosz und Flecken*), deal more directly with the problematic of town planning. The latter has the particularity of conceiving a plan following social precepts: "His plan was for a balanced urban community, not for a fortress, and he allocated blocks to different crafts, roughly zoning the town according to the main uses - industry, administration, and culture" (2).



1. Ideal plan of ***Sforzinda*** – Filarete (Antonio di Pietro Averlino), *Trattado d' architettura* (1461-64): dedicated to Ludovico Sforza of Milan.

The geometrical shapes that the "ideal cities" adopted served perfectly the new trend of thought: they reflected a global look at the city and the understanding that the rational use of forms represents the best method to give structure to a prototype of a city and, at the same time, to control its development. Most of all, regularity and symmetry meant order and quality and, thus, the classical architecture was cherished and followed.

The search for regularity as a synonym of order had its origins in the late medieval period, the development of cities as trade and political centres and the demographic growth that accompanied this process had stressed the need to control and regulate urban growth. Nevertheless, only the Renaissance period was able to formulate a defined urban discourse in accordance with the Humanistic ideas with regard to Man's role in society. If the medieval city had developed the concept of the free citizen which made possible the evolution of the European societies towards a new economic and social system, the Renaissance structured a complex, although sometimes paradoxical, discourse in which the city represented the ultimate model of the dream society. Urban space acquired, definitively, an abstract character.

Argan defines the new city as a political entity as opposed to the socio-economic medieval urban structure: "In its visible form the city no longer expressed the ideals and interests of a civic community, but rather the values or principles which were based on and justified by its political power" (3). This new political character of the urban centre is explained as a result of two elements: the rise of the middle class, the merchants, and the centralised control of the city. This analysis of the Renaissance city clearly points out the fact that Europe was ultimately looking for a different and particular political setting for the economic and social transformations taking place. The structuring of Humanistic thought and its cultural, religious and artistic expressions reveal the search for adequate answers to this fundamental question. Although these answers had mostly a utopian formulation, they generated models which were developed and put into practice throughout the following two centuries.

Quoting once more Argan: "The myth of the ideal city, born out of the humanistic thought of the early Renaissance, had two opposite results: On the one hand it led to the utopian theory of the perfect government, which created a flourishing literature right down to the eighteenth century; and on the other, it led to the military town, both fortress and barracks, of which we have numerous examples, especially in the seventeenth and eighteenth-century Germany" (4). Nevertheless, as the author stresses, this supposed paradoxical character of the ideal city was not more than two complementary

outcomes of the same model: "It was founded on the desire for power; and the desire for power inevitably translates itself into the potential of war" (5).

Argan's analysis is directed to the Italian Renaissance approach to the city and city planning in order to establish its crucial influence on European town planning of the early modern period. Following this purpose, Argan concludes his work by expressing a fundamental difference between the early Renaissance concepts of ideal city and city planning: the former would reflect the quest for a specific politically organised social structure; the latter is defined as a "historicizing urbanism", which took into account the social needs of the community. The Italian Renaissance developed, thus, a concept of city planning which would be extensively pursued in seventeenth century Europe and would be the basis, as Argan emphasises, of "the social, political and artistic character of the capital city" (6). This consideration is crucial for the understanding of the fundamental principles which gave form to the town planning movement of the seventeenth and early eighteenth centuries. In fact, Renaissance ideas and models were extensively used throughout the seventeenth century as the basis for the formulation of the baroque approach to the city: regularity, symmetry and symbolism were more effectively carried out during this period than had been ever before.

### 3.2.2 The contribution of military engineering[5]

Returning to the issue of the sixteenth century town planning proposals, let us consider again the fundamental and complementary premises of this process: political centralisation and military supremacy. Inside Europe or in the newly discovered or colonised territories overseas the importance of the military defences became fundamental as a means for political dominance. The invention of firearms rendered obsolete the old medieval walls. This reality was crucial for the definition and increasing importance of military architecture which in time developed to military engineering: a more complex and elaborate subject with a wide field of activity.

As builders of fortifications, military architects had to exercise as urban planners. Strategic locations, near the borders or around the most important urban centres, were affected by this defensive rebuilding process: old cities were protected with new lines of defence and new cities were created as bastions of political supremacy. In both cases, the complexity and solidity of the new fortifications required a global look at urban space:

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"If the defensive line was drawn too tightly, the city's potential growth could be severely stunted. If drawn too loosely, defence became more difficult as interior lines of communication were lengthened and more manpower was needed to man the ramparts" (1).

This problem was crucial for the efficacy of the new fortifications. Therefore, military engineers were forced to consider the urban space in articulation with the defensive walls. The city's physical defences had a dual function: they acted as a protection and they limited urban development. Nevertheless, while the medieval walls could be easily rearranged when needed and were often damaged in times of urban growth, these new fortifications were only effective if its global design was kept and preserved. They imposed themselves by their strong and wide architectural structures. Thus, more than limiting urban growth, they forced the structuring of urban development according to their own defensive design. As a result, the new buttresses reinforced the medieval character of the defensive walls as the city's spatial identity. Even in the mid-eighteenth century, when fortifications began to lose their function, the *Encyclopaedia* still defines a city as a fortified human settlement.

The study and practice of military architecture developed hand in hand with the humanistic ideas with regard to society and to the city. Order, regularity and symmetry were addressed by military architecture and engineering following the pragmatic use of standardised geometric formulas, which were the basis for the urban renovation of the following centuries. In fact, military engineering conceived urban plans that could be applied everywhere. By structuring the spatial layout of the new city, military engineers represented, effectively, the most consistent and intervening force of the town planning process of the early modern period:

"The geometric form of the plans, which is the dominant characteristic of the architectural and town planning treatises, should not be connected, and even less mechanically deduced, to the formulation of a social model, even if the two elements are traced (reproduced) from the reality and influence one another. The increasing accuracy of the planimetric and figurative schemes depends, without any doubt, on the decisive experience brought by the new military architecture: it imposes on every part of the city the principle of regularity as well as (and also) the new rigorous law of symmetry" (2).

However, despite being based on classical architectural treatises, military engineering was able to recreate models and solutions complying with specific political, economic, cultural, geographical and topographical situations:

"It is, therefore, simplistic and methodologically false to envisage the complex and ambiguous relationships existing between the diverse elements of the ideal city from the rules of town planning found in the treatises, as it is usually done, or, which is even worse, from the formal models which we confront with particular creations. An ensemble of norms was in the process of appearing and being elaborated as the result of the architects' and military engineers' experiences" (3).

The military engineering geometrical plans were the most effective answer to the demands of regularity and spaciousness of the new city: large and regular avenues could not only supply the ordered urban setting required by political absolutism and an adequate ground for military parades, but were also able to deal with the circulation problems created by the introduction of wheeled traffic.

Military engineers' long experience in dealing with urban issues led, thus, in the late seventeenth century, to a deeper consciousness of the town planning issue which did not solely reflect geometrical concerns. These building experts acted as urban planners and their contribution for the European urban development until the late eighteenth century was crucial.

### 3.2.3 – The Baroque program[6]

The use of perspective and the development of Mathematics (which up to the beginning of the seventeenth century was exclusively a combination of Arithmetic, Algebra and Geometry) were fundamental for the development of the Renaissance town planning models. The urban redefinition of old cities and the new fortified cities were designed according to the new spatial dimension given by the laws of perspective. The geometrical division of the urban space and the use of specific architectural structures (the monuments) as a means to re-order a previous urban maze opened the way to Baroque town planning which moulded most of the European urban creations up until the mid-eighteenth century. This method had been in use in Italy since the fifteenth century and had its most perfect expression in Rome through the urban redefinition projects put into practice throughout the sixteenth and seventeenth centuries.

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As already seen, during the sixteenth century, the expansion of Europe to other parts of the world and the religious and political conflicts which shook European society were responsible for the maturing of the new ideas spread by Renaissance Humanism. This context opened the path, in the late sixteenth century, to a new vision of the world and of European society which characterised the baroque period.

The contradictory effects of the religious movement known as the Counter Reformation in some European countries and the expansionist movement towards other parts of the Globe can explain, in great measure, the profound transformation in European thought and knowledge in the late sixteenth and seventeenth centuries. On one hand, the discoveries had opened the way to a new vision of the world: maps were being re-drawn; European society was being confronted with new cultures and practically unknown civilisations. This reality disturbed the enthusiastic trust in the ancient Greek and Roman culture (1). On the other hand, the Catholic Church tried desperately to preserve the unquestioning belief in the religious dogmas, using, to this end, an authoritarian and very repressive strategy. The conviction of Galileo by the Inquisition was a serious warning for Catholic Europe's scientists and thinkers. Philosophical and scientific thought was from date on very aware of this restrictive environment and adapted accordingly.

Despite the profound influence of the Catholic Church in the greater part of the European society, the legacy of the Humanistic work and, fundamentally, the new evidence brought to light by the European expansionist movement changed irreversibly the attitude towards knowledge. The "scientific revolution" which takes place in Europe from the mid-sixteenth century was, therefore, closely connected not only with the rediscovery of the classical philosophical and scientific works but also with the effect that the "new world" made visible by the discoveries had upon Humanistic thought. Cartesian rationalism together with the genesis of experimentalism, as an empirical approach to knowledge, revolutionised European thinking. New scientific studies like Galileo's *Sidereus Nuncius* (1610) or Copernicus and Newton's theories concerning the structure and functioning of the *cosmos* appear as the first main attempts to look at the world using this new scientific approach. Nonetheless, it was the wide application of geometry and algebra, namely to draw and measure the recently discovered world, which represented the basis for the scientific revolution of the seventeenth century:

"To measure the world and to codify it in drawing is one of the most important scientific achievements of the early modern period and required a unique capacity of abstraction which could not have emerged overnight. My point of view is, and this is only an intuition resulting from the knowledge I have of the

planning process of the medieval territory in the period which I have above mentioned, that this potential had been developing for a long time" (2).

As already mentioned, throughout the late medieval period there was an increasing concern with the ordering of urban space. The emergent conceptual approach to the city resulted in the progressive abstraction of urban space and was clearly linked to a centralisation of power, and to the unifying force of wide ranging political and economic projects. For example, with regard to Lisbon, some recent detailed work has revealed that the late medieval period prepared a conceptual vision of urban space which made possible the development of major urban projects in the early sixteenth century (3).

The new discipline of mathematics moulded, thus, European thought and served as the ordering element for the emergence of rationalism. This fundamental achievement had a crucial impact on a society undergoing profound political, social and economic changes. The idea of the city and the redefinition of the urban space occupied a privileged place in this context.

The emergence of the Nation State, the development of long distance trade, the new cultural and religious ideas spread by Humanists and scientific progress gave shape to a new order which required centralisation, uniformity, and regularity as its defining elements. The city, particularly the capital city, represented the physical and symbolical union of all of these attributes. To this end, architects and military engineers used the theoretical contribution of the early Renaissance to give form to the new urban setting which transformed the most important cities of seventeenth century Europe: "The underlying tendencies of the new order did not become visible until every aspect of life had departed from the medieval whole and re-united under a new sign. This did not occur until the seventeenth century. It was then that the intuitions of precursors like Alberti were finally expressed in the baroque style of life, the baroque plan, the baroque garden, and the baroque city" (4).

Urban space was not only the scenario for the creation of the new city but also the depository of a cultural and historical tradition:

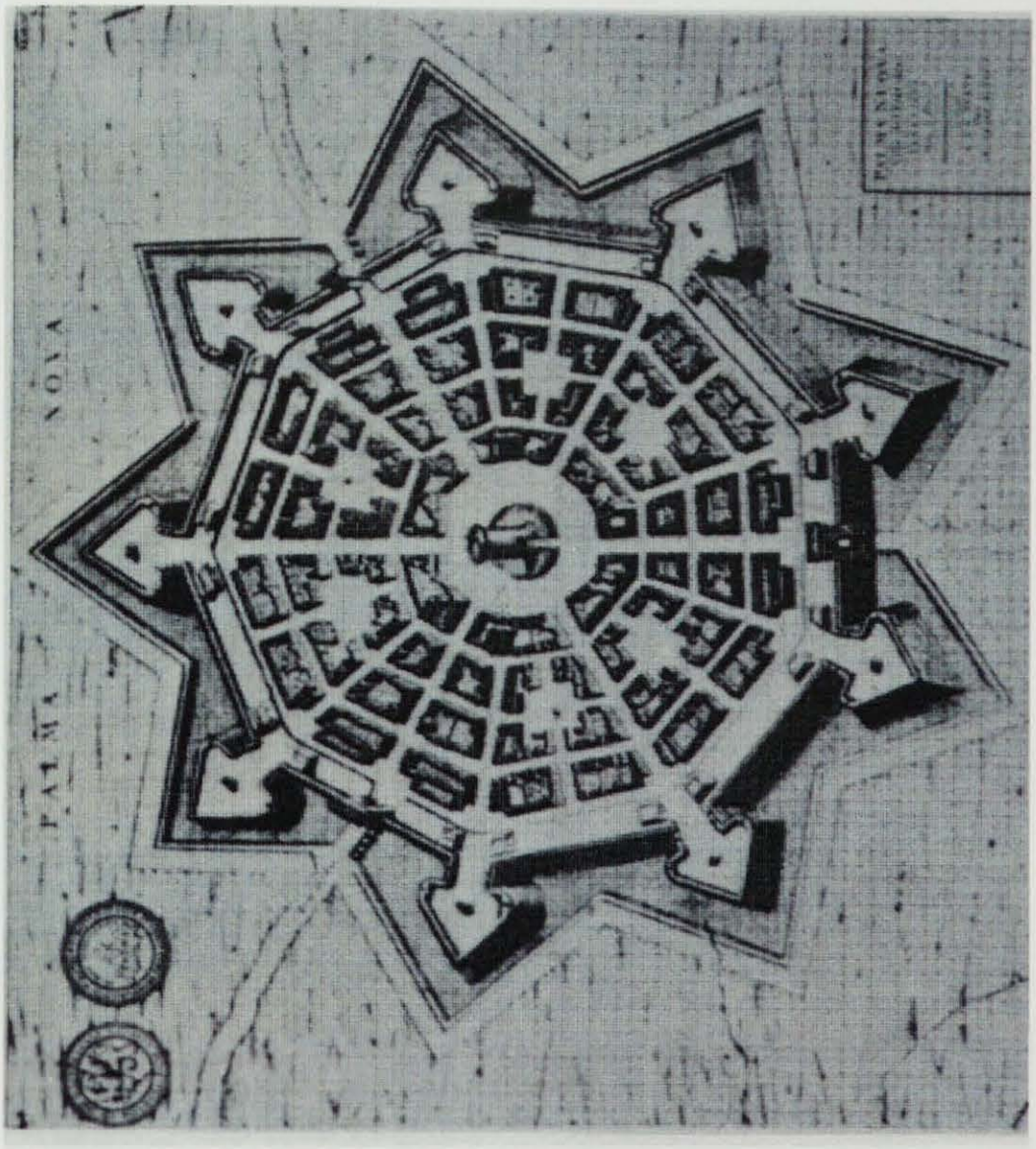
"In the second half of the sixteenth century, the urban setting became a collective concern. Italian, German and Flemish engravers (...) supplied the market with a large number of perspective city views in which a great deal of information was combined in a realistic rendering. For the first time the entire heritage of the European cities was precisely represented according to the tenets of Renaissance visual culture and given general circulation" (5).

The idea of the city matured and urban centres were treated as complex entities reflecting the different aspects of society. As Angela Marino emphasises, Giovanni Botero's work, *Della ragion di Stato libri dieci: con tre libri delle cause della grandeza delle città* (1589), has the virtue of addressing, for the first time, the city not only as a mere ensemble of physical elements but as a political, economic and social entity (6). Written at the end of the sixteenth century, it profits from the Renaissance theoretical contribution and clearly reflects the impact of booming urban development on European thought.

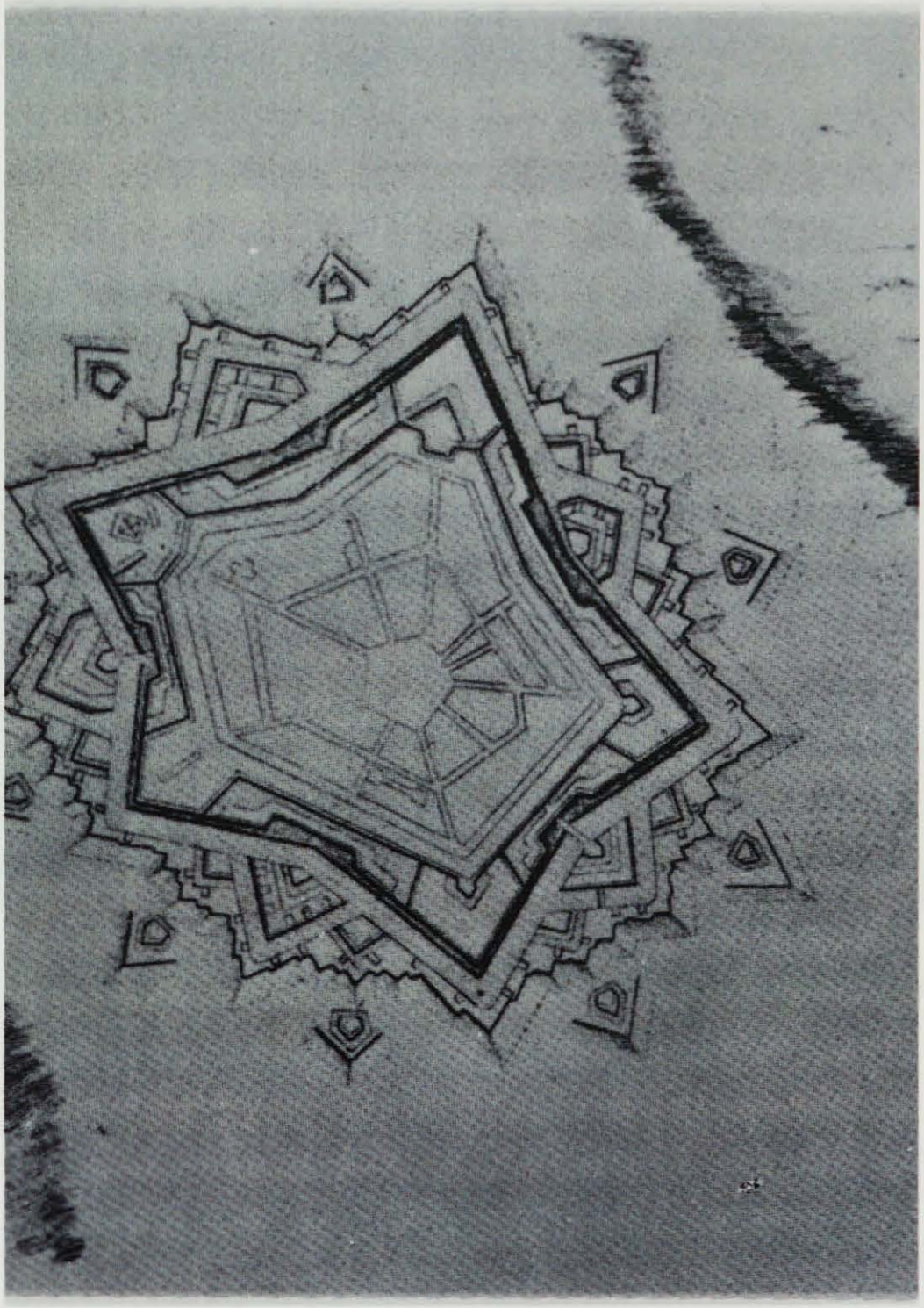
Capital cities and residential cities, both complementary urban structures in the society of the time, were planned as a whole or partially in order to express physically the search for uniformity and regularity. The use of the monument as a structuring element of space in Rome or the urban impact of the *Place Royale* in Paris were both essential tools of the baroque town planning models. Urban space was readjusted through the use of architecture as a unifying and symbolical material element.

The exercise of secular power was now solely the prerogative of Man and the means to achieve it and to keep it were being treated as an independent discipline developing outside the boundaries of religion (7). This reality reinforced the importance of military engineering. The re-fortification of towns and cities not only continued but also was extended in this century. According to the specific character of the political structure of each State, cities and capital cities were more or less transformed into military strongholds: "In the old town there were army barracks, which became as characteristic of the Baroque as the monastery had been of the medieval town. There were also the parade ground - *Champ de Mars* - triumphal avenues, and arsenals. (...) in 1740 soldiers or their dependants constituted one-fifth of the population of Berlin. Strasbourg and Lille both became fortress cities with large garrisons" (8).

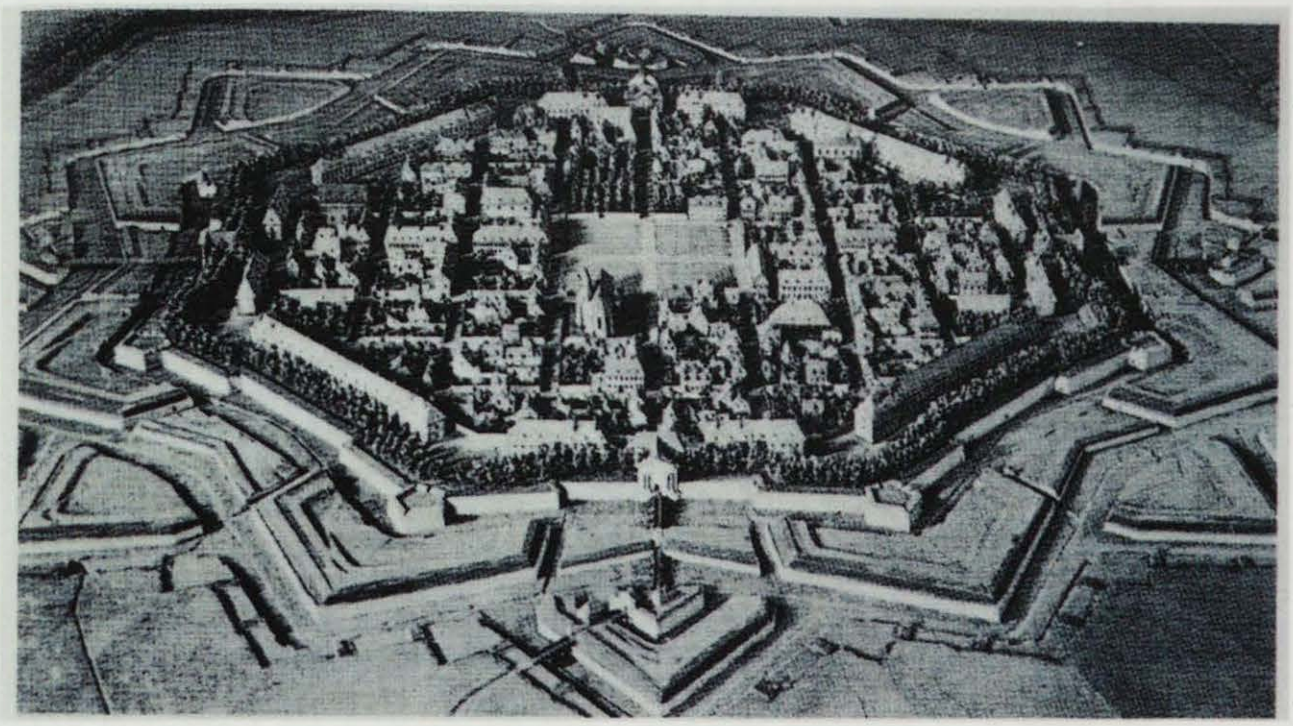
From the sixteenth century, but mainly throughout the seventeenth century, the geometrical designs of the "ideal cities" were extensively put into practice, giving shape to the first global approach to town planning. All over Europe, cities were built or rebuilt following the abstract models of the Renaissance: Palmanova, Philippeville, Neuf-Brisach and Gustavburg are just some of the best illustrations of the implementation of the "ideal city" designs to the specific needs of military defence **(Illustrations 2, 3 and 4)** (9). Following other demands, the building of the residential city of Richelieu, in the first half of the seventeenth century, represents an early, although significant, example of the set up of a global geometric design enhanced by the use of perspective




2. **Palmanova** – by Jean Blaeu published in Braunfels, Wolgang, *Abendlandische Stabaukunst*. Colonia: 1976. Built from **1593**, as a means to protect Venice from enemy attacks (particularly, at the time, from the Otoman Empire).



**3. Philippeville (1554)** – built to reinforce the Spanish Sovereignty over the Netherlands. Published in Braunfels, Wolgang, *op. cit.*



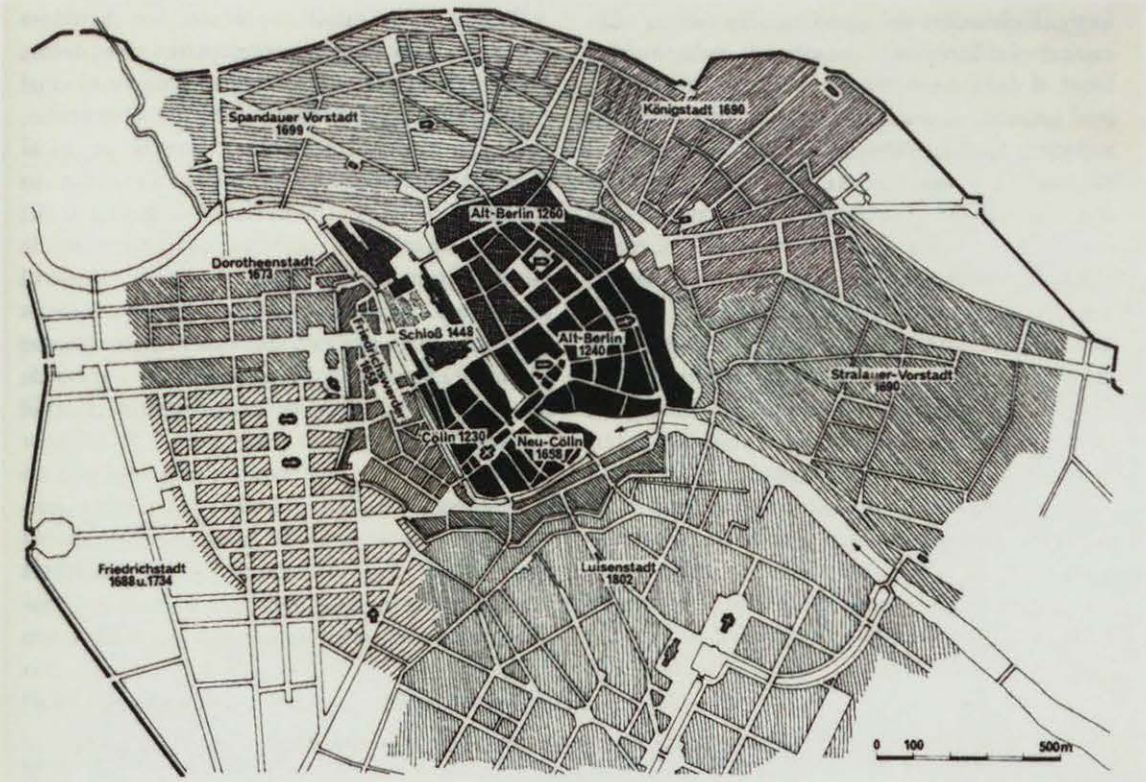
4. **Neuf-Brisach (1698) – S. de Vauban**. Built, according to the will of the French king Louis XIV, as part of a defensive line extending from Alsace to the Pyrenees. Published in Braunfels, Wolgang, *Idem*.

views. The architectural setting is submitted to the spatial design, reinforcing its regular pattern and highlighting the main areas of the city.

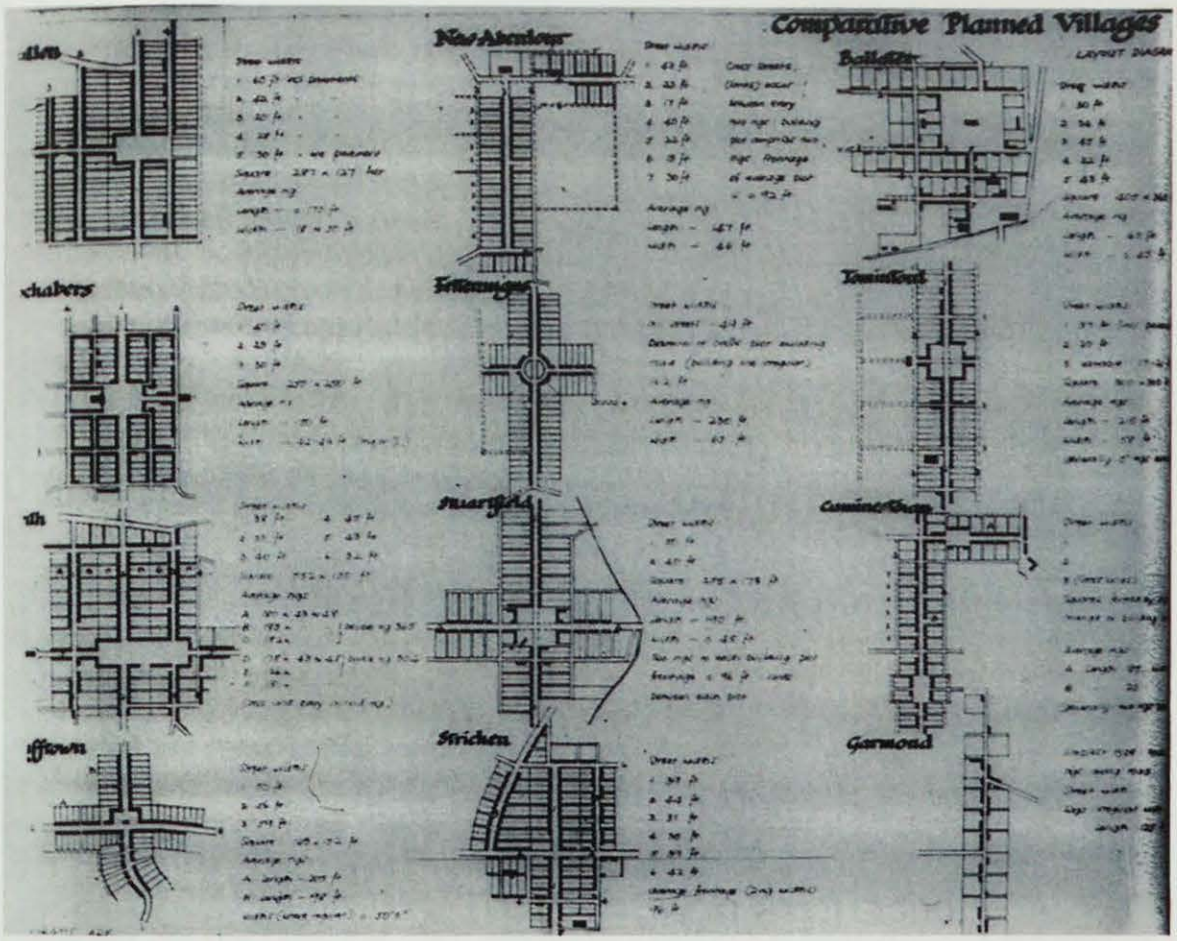
Grid and radial plans were therefore used as a means to ensure not only an urban accordance with the military fortifications but also as urban schemes able to comply with certain political, social or economic requirements. The geometrical designs of the "ideal cities" gave, thus, the framework to a more extensive urban reformulation. They were used, fundamentally, as a means to organize and restructure space according to specific situations. The grid-plan, for instance, was not only used in major capital cities as Berlin (in order to extend the old city following precepts clearly linked to military demands) but was also developed in Sicily and in Scotland as a means to colonise the countryside, in the seventeenth and the eighteenth century, respectively (**Illustrations 5 and 6**).

To understand the role of these plans in the town planning process of early modern Europe it is important to retain their dual character: as abstractions and as workable models that could be moulded to specific conditions. Alain Charre considers primarily their conceptual character when he defines the "ideal cities" of the sixteenth century as "utopian designs" claiming that: "they are of the schematic kind (sort, type) in which the geometrical abstraction erases every risk" ("they are of the schematic kind which is safeguarded by the geometric abstraction") (10). Nevertheless, these plans were gradually used throughout the seventeenth and eighteenth centuries as a basis for more complex urban creations. The colonised world knew, since an early period, the most extensive application of these models, namely, of the grid-plan.

The grid plan had been in use since Antiquity. Dan Stanislawski points out the fundamental link between the employment of this geometrical design and the exercise of a centralised power: "Some form of centralized control, political, religious, or military, is certainly indicated for all known grid-plan towns. When centralized power disintegrates, even if the grid pattern has been established it disappears. This is indicated clearly by medieval Europe as compared with Europe under Roman rule" (11). Stanislawski is perhaps too emphatic in his claim, however there is an evident relationship between the use of the grid plan and the exercise of power, which explains the privileged use of this type of regular plan for military purposes. Although the wide use of the grid-plan in the colonial world is first of all connected to military demands, it proved also to be the best means of establishing the regular ordering of streets, which served also political, economic and social projects. This fact reinforces the claim that the grid was a geometrical answer to the search of uniformity and regularity, which was always present in times of specific centralised projects.




5. **Berlin** – development of the city up until 1800. This illustration shows the chequered seventeenth and eighteenth century extensions of *Dorotheestadt* and *Friedrichstadt* which were built following military precepts of order and regularity. In eighteenth century Europe, Berlin became a model city with its spacious, uniform, paved and lightened streets. Published in Braunfels, Wolgang, *Ibidem.*




6. **The planned villages of North-East Scotland: Cullen (1820-1830); Fochabers (1803); New Keith (1750); Dufftown (1817); New Aberlour (1798); Fetterangus (1780); Strichen (1764); Ballater (*c.* 1770) Tomintoul (plans: 1775/1778; begun: 1779); Cuminestown (begun: 1763)**. Published in Nuttgens, Patrick, "The Planned Villages of North-East Scotland" *The Neoclassical Town. Scottish Contributions to Urban Design Since 1750.* Ed. W.A. Brodgen. Edinburgh: The Rutland Press, 1996, pp. 25-35. As a result of the agricultural changes taking place at the time, landlords promoted the improvement of their estates by the regular planning of these villages: "They improved the surrounding countryside by providing local markets and acting as stimulus; they were an asylum for farmers and cottagers when driven from their possessions by the increasing size of farms" (Nuttgens, p. 27).

Even the establishment of the planted towns, particularly the *Bastides*, in the medieval period corroborates this point of view. In fact, these European early examples of orthogonal town planning were devised to secure an efficient control over a given territory.

In early modern Europe, the grid plan was used according to specific geographical, topographical, political, economic and cultural situations. In fact, throughout the seventeenth and eighteenth centuries, especially in the colonised new world, the grid plan knew various formulations. The Spanish colonies in South America saw the development of a more rigid grid pattern than the Portuguese new cities in Brazil and the urbanization of North America knew the implementation of a specific cellular pattern. The reasons behind these different processes can be found in diverse strategies of colonisation, which required specific urban structures. Also the pre-existent cultures influenced in different measures the various processes of urbanisation. The Portuguese colonisation of Brazil, despite its strong political and military character, cannot be considered as a replica of the Spanish expansionist enterprise in South America. The Portuguese, for demographic and economic reasons, developed from an early period a coastal occupancy of their colonies. The Spanish colonisation was a more centralised political and cultural project which presupposed the total dominance of the colonial territory: "Besides the various questions already mentioned, from which I highlight the mercantilist option that leads Portugal, on a first stage, to have in the sea the real territory of its Empire, it should be registered that the colonisation/conquest carried out by the Spanish monarchs in the Aztec Empire is the prolongation of the Iberian Re-conquest concluded by the Catholic Kings in Granada" (12). Also, the period of urbanisation of the colonies did not coincide, as a whole, in these three situations. In the African and Atlantic colonies and possessions, the Portuguese proceeded to the installation of human settlements and fortifications since the late fifteenth century and in India and Brazil since the sixteenth century. Nevertheless, it is from the late seventeenth century that the bulk of the Brazilian cities were founded. The Spanish colonisation in South America was processed from the sixteenth century. The period of urbanisation of North America was mostly conducted from the eighteenth century onwards.

The radial plan is mainly an acquisition of the Renaissance period and its form is connected to the polygonal shapes of the new fortifications. Its use, however, was extended to emphasise the spatial force that characterised the baroque approach to town planning. Edmund Bacon defines this formula as "a shaft of space and its design thrust", and classifies it as a distinctive element in northern European town planning (13). However, more than an eighteenth century regional town planning characteristic, this spatial formulation is clearly an acquisition of the baroque town planning proposals: it

structures space by creating a perspective view of some relevant architectural elements. In other words, space is moulded by architecture and architecture is highlighted by spatial lines.

Lewis Mumford sees different moments in the evolution of the architectural taste in the seventeenth and eighteenth centuries. He considers the diverse architectural proposals as a product of three different stages of the baroque town planning process: "In terms of the city, the renascence forms are the mutation, baroque forms are the dominants, and neo-classical forms are the survivals in this complex cultural transformation" (14). Evidently these three forms existed in different political and cultural situations at the same time. More than expressing an evolving architectural taste, the use of diverse architectural vocabularies, which were combined with specific and adequate geometrical town planning designs, reveals the availability of well defined architectural and town planning programs to be used according to practical and symbolic demands.

The "duality" of character of the baroque artistic expression, which Mumford refers to as "order" and "sensuality", separating the town planning proposals from the painting and sculpture works, unveils the inherent tensions and imbalances of a society, increasingly aware of Man's individuality, which is evolving towards a centralised and unifying political and economic system: "First: The mathematical and mercantile and methodical side, expressed to perfection in its rigorous street plans, its formal city layouts, and in its geometrically ordered landscape designs. And at the same time, in the painting and sculpture of the period, it embraces the sensuous, rebellious, anti-classical, anti-mechanical side, expressed in its clothes and its sexual life and its religious fanaticism and its crazy statecraft" (15).

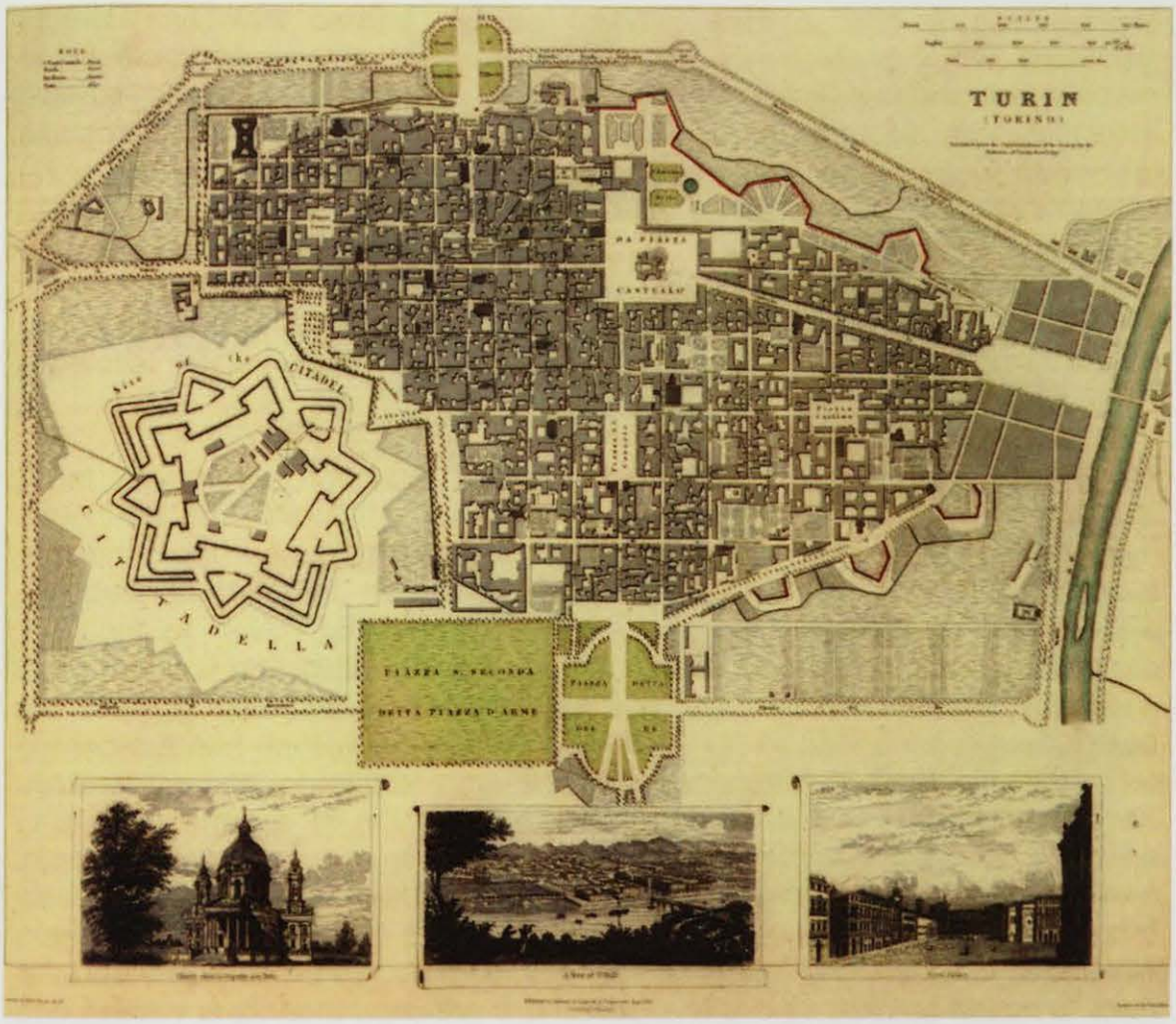
However, the "duality of expression" of the baroque was also expressed in its architectural programs. These were developed as structuring urban proposals aiming not only at a spatial order but also a dynamic physical character. As referred to above, the seventeenth and eighteenth centuries combined the use of geometrical town planning designs with architectural units in order to achieve a balance between space and form. The use of sober classical architectural models or the more voluptuous forms of the baroque proposals do not express different concepts of the city. In fact, both approaches aimed for a ordering of the city following well-structured projects of symbolic and functional purposes. Specific military, political, economic or cultural demands were addressed with a choice of combinations of spatial design and architectural elements. French classicism gave form to a monumental architectural structure that could give uniformity and symmetry to a project of power. Rome was the paradigmatic example of the baroque forms "as

dominants" following Mumford's definition: the monument was able to generate a spatial scenario which brought dignity and unifying structure to the urban maze. Nonetheless, in both cases the city was planned according to a concept that viewed architecture as a means to generate a spatial dynamic.

Saisselin states the following: "... we include the age of Louis XIV, which the French see as their 'classicism', as still within the Baroque moment because of nonclassical traits belonging to such a moment - the court, religious enthusiasm and mysticism, strong passions, and a conception of the hero, the courtier, and the saint as dominant types" (16). Overall, the sensuous character of the baroque proposals reflects an essential feature of the seventeenth and early eighteenth century European society: the dramatization of reality. Art was used as a fundamental element of the society's approach to life. The classical architectural proposals could also serve this purpose, as their unified vocabulary is consistent with political centralized projects that aimed for the symbolical expression of their fundamental concepts. These projects were ultimately directed to the affirmation of a national idea, which was crucial to the development of the modern states. It was, in fact, as a physical expression of the needs and aspirations of a politically and socially organised community, that the classical architecture was later retained, as the neo-classical style, by town planning proposals following enlightened ideas.

In conclusion, we can assert that the classical vocabulary is not necessarily anti-baroque if we consider it to be an instrumental resource rather than an ideological element *per se*. Classicism or neo-classicism are designations that define formal architectural options which serve, primarily, requirements of uniformity and regularity that can be connected to political and social demands. The seventeenth century absolutist political ideas conformed to this reality, as did the eighteenth century functional and utilitarian town planning concepts. The use of a specific architectural vocabulary cannot be linked to a sole ideological and cultural movement in this period. The urban projects are better defined by the system of ideas that presided over them. For the first time since the classical period, a conceptual notion of space was structured as a fundamental ideological statement of the new political, economic and social era. As a result, this period established town-planning models that were able to survive for nearly four centuries, giving structure to urban space well into modern times.

Turin, for instance, is a paradigmatic example of what was stated above. This old fortified town was projected as the capital city of the Duchy of Savoy following a process which began in the late sixteenth century (**Illustration 7**). It was extended by the urbanisation of a new area that was built following the




7. **Turin**. Engraving (mid-nineteenth century). **William Barnard Clark.** Published in Branch, Melville C., *An Atlas of Rare City Maps (Comparative Urban Design, 1830-1842)*. New York: Princeton Architectural Press, 1997.

new ideas with regard to the representative character of architecture and town planning. Giovanni Botero (b.1549 - d.1617) was Carlo Emmanuele I's (b.1580 – d.1630) *protégé*, the first to develop projects of urban extension in Turin. Throughout the seventeenth century, Turin was expanded following precepts of urban rational order, architectural magnificence, and military strength. The overall structuring ideas were paradigmatic of the new concept of capital city. It was carefully elaborated as a political and military urban project and was carried out by building experts with a considerable architectural experience: "The architects who transformed Turin - including Guarini himself - combined secular, religious, and military architecture; designed interiors; drew up city plans; and wrote treatises on fortification" (17). Thus, the planning and building of the new Turin was set in motion following a clear concept of the city and an harmonious combination of theoretical principles and practical experience: "The seventeenth-century design of Turin established an expressive form so resonant of power that it continued to inspire architectural and urban form long after the demise of the absolutist military state" (18).

What is important to retain is that the cities built, rebuilt, extended or re-structured throughout this period were planned, following specific political, economic and cultural demands, according to a stream of elements which included, in different measures, the Renaissance theoretical heritage, a tradition of town planning processes and the adaptation to specific topographical and cultural realities. The use of the "ideal cities" plans were the unifying element of this process and, despite the multiple variations carried out and developed according to the reasons above mentioned, these abstract models represented the first global approach to town planning. The crucial importance of military engineering throughout this period led to an interdisciplinary function of the architects and the military engineers. Also, the close connection between architecture, namely military defences, and town planning at the time gave to these building experts a versatile experience and a broad vision of the city as a conceptual and social system. Thus, architects and military engineers were the first creators of a wide ranging notion of town planning, of the abstract character of city space and the practical effectiveness of this idea.

These architectural and planning models and ideas were inherited by the eighteenth century. Nevertheless, the political, economic, social system was maturing and developing towards a new stage. Architecture and town planning were adapted to the new reality following the emergent philosophical and economic ideas. The fundamental town planning concepts in development since the Renaissance acquired, fundamentally from the mid-eighteenth century, a consistent social character.

## 3.3 - The Enlightened city[7]

The texts - pamphlets, brochures, treatises - concerning the city written throughout the seventeenth and eighteenth centuries express invariably two notions:

- The consciousness that Europe had an economic, social and cultural identity;
- The systematic plea for architectural embellishment and public convenience in the urban works.

The idea of Europe had evolved since classical times, it was originated in Asia and it was developed by the Greeks to stress the superiority of their culture and politics. Nevertheless, it was the Roman Empire which gave to Europe a unified political, cultural and religious form. The medieval period saw this idea gaining a concrete and specific sense as a cultural entity and a model of civilisation using the heritage of the Roman times as a common reference for the diversity of political realities.

The Renaissance movement and the maritime European expansion conveyed to the Europeans the sense of belonging to a superior civilisation. This concept was cherished by the Enlightenment and moulded European thought up to the present time: "The ability, whether the consequence of environment or divine will, to control the resources of the natural world, to make them work for the greater good of humankind, had given Europe its assumed superiority among the peoples of the world. This is the origin of the belief, which is still shared by many, that Europe, or 'The West' is exceptional" (1).

Emulation and competition between the different countries were fundamental elements of the development process in all areas of European society. Pombal, the enlightened Portuguese prime minister who was responsible for the rebuilding of Lisbon after the 1755 earthquake, made the following statement when staying in London as an envoy extraordinary: "All the European nations grew, and are still growing today, through reciprocal imitation. Each one watches carefully the actions of the others. In this manner, following the information of their ministers, all of them make their own use of foreign inventions" (2). This extract has the merit of revealing very clearly the concept of Europe as a cultural identity. With regard to architecture and town planning, it is important to emphasise that no European country disregarded what was being created and implemented elsewhere in Europe.

[7] Notes p. 56

The analysis of the most revealing documentation about urban issues, throughout this period, is often structured by an attitude of emulation: town councils' documents, general texts concerning architectural precepts or town planning principles claim generally foreign positive experiences in order to stress the adequacy or urgency of their proposals.

Not only in Portugal, but also all over Europe, the analysis of city councils' documents with regard to town planning strategies can be extremely enlightening about the development of the concept of the city. They express the combination between thought and *praxis*, between the application of new ideas and new techniques to daily recurrent situations: "Being Your Majesty informed, by the City Council Representation to the King of the 20th last month, of the ruin threatening the wall of the fathers *quentães*'s convent, and the danger to which are exposed the people passing by (the passers by on) the *Rua Nova do Armada* [*Rua Nova do Almada*] to the *Chiado*, Your Lordship decided to consider, in Your high understanding (sympathy, kindness), that being that location the busiest in the city, it was necessary to enlarge the *rua Nova da Armada* [*Rua Nova do Almada*], from the mentioned church onwards and the *Chiado*; commanding the City Council to send the city works' councillor, architect Eugénio dos Santos and the city masons, to do a survey in order that a plan could be drawn by the said architect" (3). The main concerns of European city councils were connected, particularly from the late seventeenth century, to urban growth and its consequences for the urban environment: the keeping of the streets and roads; building regulations; cleaning; lighting; policing; urban infrastructures (namely water supply and sewerage) and traffic. Working together with the institutionalised political power, city councils, during this period, aimed for the establishment of a body of rules concerning building uniformity and spatial regularity. Obviously their work and proposals varied according to specific political, economic, social and cultural situations. However, the overall tendency was directed to a unification of programs and processes following an increasing global look at the city's spatial and social universe.

Despite regional and national characteristics and needs, it seems obvious that there was a general awareness of the availability of a homogenous theoretical and technical framework to town planning developed in seventeenth and eighteenth century Europe. The implementation of architecture as a defined profession with its inherent system of instruction and education, especially in the military engineering, and the invention of printing concurred to that end.

The circulation of printed books had a fundamental and dramatic effect on the exchange of ideas and news in early modern Europe. This fact explains the

global use of the literature produced about the city, architecture and urban development, at the time. Books began to represent the principal source of transmission of specialised information. To add to this information, newspapers rapidly developed, benefiting from an increasing number of readers interested in what was happening all over Europe as well as in other regions of the recently discovered world (which gradually had been incorporated in the "known world" by the imperial expansion of the European nations).

The circulation of information was completed by the circulation of architects and the taste for travelling. The second half of the sixteenth century marked the beginning of this process. The Italian military architects represented the first group of urban experts to be employed by different European Crowns. Military architects were formed all over Europe and soon were used as urban experts in the different European states. They produced Handbooks and Texts, which represented an important source of information with regard to town planning and architecture. Civil and military engineers (as already mentioned, most of the time they could perform indifferently) were sent abroad by their monarchs in order to improve their education and skills.

In Britain, where the enlightened attitude toward art and culture was part of a system of values and ideas shaped by a society ruled by the interests and demands of trade, the taste for travelling developed as part of the curiosity for the foreign and the unknown: "There was much that was even more revolutionary in the responses which both politeness and commerce provoked: Methodist 'enthusiasm', systematic collective philanthropy, subversive political radicalism, and not least, critical interest in the status of women, children, foreigners, slaves, distant peoples, animals, and every other living creature not blessed with the inestimable divine gift of birth as a free-born, propertied Englishman" (4). With regard to architecture, the taste for the classical style and the search for information were responsible for the long journeys made by British architects and lovers of the subject all around Europe and, mainly, to Italy during the eighteenth century.

But not only had the British travelled throughout the eighteenth century: visits abroad represented either an important source of knowledge for the enlightened minds of some privileged individuals or an attractive destination for some fortune seekers.

As civil and military architects engaged by the European monarchs to perform a specific task or simply as individuals moved by an enlightened curiosity, urban experts travelled around Europe, as part of a global cultural, artistic and

scientific movement. This process reflected and stressed the strong sense of cohesion which characterised the urban creation and the exercise of architecture in early modern Europe (the architect and the military engineer playing the part of the urban planner as an enlightened European individual). Therefore, the analysis of the libraries of the architects and engineers responsible for some of the most significant projects of urban renovation in pre-modern Europe could bring some light on the meaning and purpose of their own creations.

The concepts, which are usually linked to the town planning proposals of the eighteenth century, can be traced in city councils' documents as early as the sixteenth century. They gained a more elaborate aesthetic definition in the seventeenth century and the Enlightenment retained them as pre-requisites in large urban projects. These concepts referred to the public convenience and the embellishment of the city. These established urban requirements were appropriations of the classical ideas of *commoditas* and *venustas* expressed by Vitruvius. From the sixteenth century, these concepts were redefined as part of the new urban planning tendencies of architectural magnificence, regularity and symmetry. In the eighteenth century, the concept of embellishment gained a dual meaning of formal prestige and civic awareness and the idea of public convenience was broadened by the inclusion of the concept of functionalism (5).

In England and, particularly, in the Netherlands, for instance, where a middle class strongly influenced political structures and economic programs, the town planning process clearly shows a social outlook to the problem of the city. There is an evident concern with town planning details aiming for a functional use of city, ultimately seeking to serve public convenience. Also, the use of private entrepreneurs in the building process of both countries reveals already a modern approach to town planning. Nevertheless, the rebuilding of London after the Great Fire, or the extensions of Leiden, Haarlem or Amsterdam, took place in an historical period of town planning which enabled them to profit from a wide range of conceptual solutions and practical experience. Reflecting the new concept of urban space as a unified and functional system, these experiences were also fundamental contributions to the European town planning movement. Despite being developed in the seventeenth century, these English and Dutch town planning experiences are already a remote sign of the Enlightenment concept of the city and even of modern town planning procedures: they emphasise the social dimension of urban space and broadly employ speculative building procedures.

To understand the role of Enlightenment thought in the onset of a new approach to town planning, let us firstly consider its structuring ideas.

The Enlightenment is generally defined as a philosophical movement which developed in Europe in the second half of the eighteenth century. However, its main ideas were structured since the late seventeenth century mostly as a result of the new horizons opened by the European expansion overseas and the seventeenth century scientific studies. As Humanism, the Enlightenment reflects first of all a quest for knowledge. Rationalism played a very important role in the onset of this philosophical movement as it gave a very sound basis for the structuring of a new way of thinking. However, Rationalism excluded a very important source of knowledge: observation. It was also through observation that the European scientific community had been able to confront its postulates with the new evidence revealed by the discovery of other "worlds", which showed different geographical, ethnical, geological, botanical and zoological realities. In 1687, Isaac Newton (b. 1642 – d. 1727) publishes his work *Philosophiae Naturalis Principia Mathematica*, generally known as *Principia* which establishes the main principles of the new approach to knowledge: experimentalism. This fundamental and extensive book on Physics contains four "Rules of Reasoning in Philosophy" that sum up Newton's understanding of the scientific process. In his Rule IV, Newton states that observation and induction should direct philosophical and scientific thought rather than hypotheses. Newton states: "In experimental philosophy we are to look upon propositions collected by general induction from phenomena as accurately or very nearly true, notwithstanding any contrary hypotheses that may be imagined ..." (6). John Locke (b. 1632 – d. 1704), the English philosopher, corroborates this thesis in 1689: "The senses at first let in particular ideas, and furnish the yet empty cabinet...In this manner the mind comes to be furnished with ideas and language, the materials about which to exercise its discursive faculty, and the use of reason becomes daily more visible ..." (7). Rationalism that had directed the development of science and the progress of social structures gave, thus, place to experimentalism or empiricism as the basis of knowledge.

Eighteenth century thinkers were confronted with a political power that was reinforcing its authoritative character and with an economic dynamic that was shaking the social framework of Europe. This reality shaped the fundamental enlightened ideas about society. As a philosophical and economic new system of ideas, the Enlightenment aimed for a new political order more in contact with the social needs of each community. This trend of thought produced elaborated works such as Montesquieu's work *L' Esprit des Lois* (1748) with regard to the separation of political powers or, despite its divergent and innovator character, Rousseau's *Le Contrat Social* (1762) which clearly opposed the absolutist regime.

The Enlightenment pictured Nature as an organism functioning according to its own rules and Man appears as a fundamental part of it. Placing the Divine

as the "invisible hand" which presides over all of this living and autonomous entity, the Enlightenment clearly separates the physical and the metaphysical worlds. As part of an evolving Nature, Man should seek progress and improvement and therefore a profound change in political, social and economic structures was required. There were differences of opinion between the most relevant thinkers. Nevertheless, the key concept of the unity of Nature as a coherent system and the role and place of Man in this context commanded this trend of thought. The Enlightenment represents, therefore, the awakening of the conscientiousness that only through Man's attributes, as a rational being, it is possible to know, to understand and to learn. Or, in other words, only through the use of experience and reason, could Man study Nature and himself, ultimately as a means to obtain the improvement of its living conditions. This belief had crucial repercussions for the overall approach to religion as it is based on a different appreciation of Man's terrestrial existence. As opposed to the medieval concept of life as a transitional stage, as a selective passage to a perfect metaphysical existence, the Enlightenment expresses the conviction that it is Man's obligation to seek for happiness on Earth. For most, this new concept was embodied in the Divine creation of the universe, as the cosmos is an evolving system.

Enlightenment is, nonetheless, a general denomination, which hides various and specific formulations. Fundamentally, it developed according to particular political and social situations. As Hampson states: "For the Enlightenment was less a body of doctrine than a number of shared premises from which men of different temperaments, placed in different situations, drew quite radically different conclusions" (8).

The way these general assertions were systematised and put into practice was directly connected to the specific context where they developed. The French Enlightenment, usually regarded as "The Enlightenment", was structured in a hostile political and religious context. More than directing a particular historical movement, this trend of thought reflected the tensions resulting from the conflicting political and social forces in action. In so doing, it developed towards the conception of a new order able to satisfy the main social principles of progress and harmony that it had defined. The Enlightenment in France emerges as a wide-ranging system of ideas that was able to structure a revolutionary approach to knowledge and society: "if there is any validity in this way of looking at the assumptions behind the French Enlightenment, it follows that we are dealing with a widely disseminated attitude of mind rather than with a specifically literary or philosophical movement" (9).

In Britain, where the Enlightenment had also a particular and significant expression, the religious and political framework was no longer an obstacle to theorists. Protestantism and the establishment of the Parliament had created a cultural and social environment that was favourable to the flourishing of these new ideas. Overall, the fundamental role played by the middle class in the English society prioritised the approach to cultural and social issues: "With their own constitution assured, English thinkers were less interested than others in providing comprehensive theories of the cosmos or speculation on the biology of man, but more exercised with a praxis of man in society" (10). Scottish Enlightenment reinforced the notion of utilitarianism as a response to Scotland's economic and social debilities, which were directly confronted with England's fast progress after the Union Act of 1707. Scottish thinkers, shaped in the academic environment, gave, therefore, a significant contribution toward the genesis of a bourgeois culture, or, in other words, to a culture which was able to set up a favourable environment for the development of a progressive and enterprising elite.

However, a new form of political absolutism developed within the framework of the Enlightenment: the enlightened despotism or, as some authors prefer to name it, the enlightened absolutism (11). This form of government put in practice a more complex political system, which, despite seeming more open to social improvement, reinforced, however, the autocratic character of the absolutist sovereign. Thus, in times of economic development and social change, the new face of power mirrored, essentially, the imbalance of a transitional historical period.

Enlightened despotism leads us to a controversial subject: its apparent dual character. In fact, although the need to eradicate despotism from the political system is sustained by most thinkers, the Enlightenment combines the emphasis on the individuality of Man with the compelling need to establish a system of values and codes directed to the whole of European society and, ultimately, to the colonised world. However, it is exactly this seeming paradox that better defines the Enlightenment: it expresses the inner search for a new order able to provide individual freedom for mankind: freedom of thought, freedom of trade, freedom to decide one's own political destiny. This requires a structured way of thinking, which could only be effective through its universal and didactic character. As Roy Porter points out: "To utilitarians, rationality did not only spell personal freedom; it was also disciplinary, a tool in the forging of that efficient regime in which the rational would regulate the rest" (12). Therefore, more than a time of change, the seventeenth hundreds represented a specific historical reality. Its system of ideas and values expressed the inherent sense of modernity, of ultimate level of social and cultural expression, which the European enlightened minds believed to have achieved at the time. For its contemporaries, the eighteenth century was not a

mere transitional stage; it represented instead the right historical moment for the establishing of a given idea of society and culture. This same perspective moulded the concept of the city and town planning.

Although the Enlightenment illustrates the structuring of a mentality, which was clearly linked to the emergence of merchants and bankers in the European economic scenario, it cannot be generally defined as a structured ideological expression of the aspirations of the middle class supposedly aiming to overturn the political and social structures of *ancien-regime* Europe. The maturing of some Enlightenment concepts allowed the set up of more specific social and political programs as it happened in France. Nevertheless, this trend of thought was more the expression of a changing social environment, with the forces in presence trying to adapt and to progress in a conflicting context, than an assumed social ideology. It was rather a system of ideas, which reflected the awakening of new philosophical, economic and social concerns and motivations.

There is an obvious difference of perspectives between any historical analysis of the Enlightenment and its contemporary opinions. The former tend to consider not only the ideas but also the context where they were developing. The latter cannot have an overall perspective of the situation: they are confined to a particular experience and knowledge. For the enlightened theorists, there was only a quest for a more suitable political, social, religious and cultural scenario for European society. In fact, enlightened thought developed not only general concepts but also models to be applied in different situations and aiming at specific subjects: in France, as already stated, given the repressive and retrograde character of the monarchy, there was a more radical approach to social and political issues. Nonetheless, it is the novel character of the main structuring ideas or measures that can be considered as really enlightened. This can explain why the new despotic order used some of these ideas which were supposedly contrary, in essence, to its authoritarian character: "Rulers and their ministers aimed, above all, to govern their states according to the most up-to-date ideas, and they found these principally but not exclusively in the doctrines of the Enlightenment" (13). It explains also why the British system was so dear to enlightened thinkers, namely to the French Enlightenment. Overall, there was a quest for modernisation and social progress as a means to obtain the so desired happiness of the people. Parliamentary Britain with its modern social system was obviously a model and also an economic competitor for the autocratic European states: "If we take the *Philosophical Letters* by Voltaire [b.1694 – d. 1778] we immediately see how England is so useful for him in his attack to the absolutist power of Divine Right whose hardship he has just experienced in France. It is London that he observes, but it is Paris that he aims. And he

aims so well that he gives us an essential text for the understanding of the genesis of the enlightened secular city" (14).

The city represents for enlightened thinkers the spatial unity where all the attributes of European's civilization can and should meet to concur to the progress of Mankind (15). It is this new idea that is mainly responsible for the change in the approach to town planning issues.

The seventeen-century approach to urban planning issues is already part of the genesis of the new philosophical and scientific ideas concerning the city. Descartes' considerations express, first of all, the close relationship between the military architectural models and the new attitude toward urban space: it was the repetition of a single module or the uniform work of a single mind which could confer beauty on an ensemble - "Amongst these, one of the first, which occupied myself, was to consider that most of the times there is not as much perfection in the works which are composed of various pieces or made by various masters as there are in a work only made by one man. ...Therefore, these old cities which, having started by being villages, transformed themselves, with time, in large urban centres, are often so ill-proportioned in comparison with those beautiful fortresses, designed by an engineer to his own will on a plain ..." (16). In other words, regularity and uniformity are for Descartes (b. 1596 – d. 1650) synonymous of beauty. This concept is widely spread in the consciousness of most urban planners and architects as it is in the minds of city councils authorities throughout the late seventeenth century. Eventually, with the development of enlightened ideas, it gave shape to the idea that a utilitarian and functional architectural and urban structure could be *per se* a dignified aesthetic statement. This was the case of some of the more practical approaches to town planning as it is was the example of Pombaline Lisbon (1756 – c.1840). From the Cartesian principle of order and uniformity, town planning proposals developed in order to obtain an ideal balance between aesthetic and functionalism. Nevertheless, the use of architectural formulas and urban designs during this period followed, as already mentioned, particular political, social, economic, cultural and even religious circumstances. Therefore, a regular and uniform architectural setting was not always obtained according to the same formal solutions and following the same town planning ideas.

The production of essays and treatises on architecture saw a significant boost at the end of the seventeenth century. Overall, these works express the same concepts that shaped town planning proposals: the establishing of distinct architectural models and rules and the need to divulge them in a simple and legible manner.

Most theoretical and technical works aimed to teach their readers how to improve their skills according to specific architectural principles. Betterment and modernisation were the fundamental aims to reach: "The great Pleasure that Builders and Workmen of all Kinds have of late Years taken in the Study of Architecture; and the Great Advantages that have accrued to those, for whom they have been employed; by having their Works executed in a much neater and more significant Manner that induced me, to compiling of this Work, for their Improvement" (17).

The Essays in military architecture are particularly revealing of the general concern in teaching and informing in a clear and efficient manner: "The disposition of this work is that I propose, firstly, a very simple practice, so that any soldier will easily and rapidly know how to draw all kind of Fortifications, which are built nowadays, with very precise proportions, from which result not only the defensive and offensive fortifications, with all the military precision, but also each one of its kind, solid and strong, consistent with its importance ..." (18).

William Chambers (b. 1723 – d. 1796) also reflects this point of view when he states: "Abstruse and fruitless arguments shall carefully be avoided; nor will I puzzle the Ignorant with a number of indiscriminate examples; judging it more eligible to offer a few that are good. Perspicuity, Precision, and Brevity will constantly be aimed at in the style; and in the Designs, Simplicity, Symmetry, Character, and Beauty of Form" (19).

It is obvious that each of these works expresses the views of different authors and above all, they reflect the experience and the knowledge of each one of them. Nonetheless, there is undoubtedly a unified search for a method of approaching architecture and its practice. This is clearly a reflection of the new ideas which structured European thought since the late sixteenth hundreds: the principle that the teaching and the practice of architecture should be regarded as a functional task and, at the same time, the belief that art and, most essentially, architecture ought to be considered as a privileged expression of Mankind's intellectual excellence.

These two main principles, which seem contradictory, are, nevertheless, complementary and evolving aspects of the same trend of thought: on one hand, the stipulation of universal architectural and town planning modules and models to be applied according to specific circumstances and demands and, on another hand, the conviction that architecture should represent and dignify the cultural standard of a given society. The creation and proliferation of Academies represented a significant element of this scenario: more than

schools, these institutions regulated and imposed fundamental artistic rules in a presumed enriching theoretical environment. Uniformity and, to some extent, autocracy were again part of the process of searching for a supposedly more balanced and dignified cultural and social setting. Chambers gives us the following definition of architecture: "Amongst the various Arts cultivated by Men, some are calculated for the uses of life, and adapted to supply our wants, or help our infirmities, some again are merely the instruments of luxury, being wholly contrived to flatter the vanity, or gratify the desires of mankind: whilst others are fitted to many purposes, contributing at the same time to the preservation, the amusement, and the grandeur of the human species. Architecture is of the latter kind ..." (20). Pierre Patte's eulogy (b. 1723 – d. 1814) of the example of France during the Sovereignty of King Louis XV reflects also the same idea: "As a result of what we have just mentioned, it is easy to consider that our arts bring to this kingdom a greatness and a fame which we do not perceive anywhere. They only yield to our literature. Our good works of all kinds are, more than ever, the delight of Europe. Paris, that wealthy and populous city, ought thus to be regarded as the first city in the world, as the centre of happiness and genius" (21).

The *Essai sur Architecture*, written by Antoine Laugier (b. 1711 – d. 1769) and published in 1753, represents an important example of the effects of the new trend of thought with regard to the teaching and the exercise of architecture: "We have not as yet any work, which establishes in a solid manner the principles of it, which manifests the true spirit of it, or which proposes rules proper to direct the talent and to fix the taste. It seems to me that with regard to the arts which are not solely mechanical, it is not enough to have the skill to work, it is fundamental that we learn to think" (22). This work reveals the genesis of a new idea which was fundamental for the development of architecture in the second half of the eighteenth century: the need to break from the seventeenth century strict classical rules and the necessity to reinvent the style, or in other words, the formal vocabulary within the confines of classicism.

Antoine Picon makes the distinction between the seventeenth century rationalist approach to architecture, which was expressed by the prevalence of the classical theory precepts and the functional disposition which characterised the works of neo-classic architects as De Wailly (b. 1729 – d. 1798), Boullée (b. 1728 – d. 1799) and Ledoux (b. 1736 – d. 1806) (23). In this movement he sees the "demise of classical architectural theory" and its reductive rules and the emergence of a more flexible and practical attitude towards the art of building (24). The increasing importance of the engineers as a separate group within the architectural process and the establishing of institutions linked to their specific attributions, as was the case of the French corps of the *Ponts et Chaussées*, represented the main force behind this

change of perspective. In fact, functionality was a fundamental element of the new architectural trend. Nonetheless, the development of the enlightened ideas and their application to architectural principles was a path which knew more than one formulation. Rococo and neo-classicism are expressions of an architectural definition of taste and principles which followed, overall, philosophical concepts: for enlightened thinkers, architecture represented a means to express and promote Man's intellectual superiority and as such could and should be used following defined principles. These principles were used as an aesthetic statement and a utilitarian achievement. The role of the engineer, from the military architects to the civil engineers at the end of the eighteenth century, in this process can be defined as a long and steady intervention connecting architectural formulations with town planning issues: their intervention was always pragmatic and their outlook was continuously characterised by a global sense of space.

To the above texts we can add a number of works debating town planning issues, in specific situations, which can be especially revealing of this new trend of thought. One of these works is John Gwynn's book: *London and Westminster Improved...* published in 1766. Searching for an urban renewal of London following an undoubtedly enlightened vision of the city, more precisely of the capital city, Gwynn (b. 1713 – d. 1786) initiates his discourse by stating the following: "It is very certain that no publick good ever was proposed to which interested individuals have not objected, but it certainly does not follow, that for this reason publick good is not to be attended to at all", and continues: "Publick magnificence may be considered as a political and moral advantage to every nation; politically, from the intercourse with foreigners expending vast sums on our curiosities and productions; morally, as it tends to promote industry, to stimulate invention and to excite emulation in the polite and liberal arts", and concludes "Let us, therefore, no longer neglect to enjoy our superiority; let us employ our riches in the encouragement of ingenious labour, by promoting the advancement of grandeur and elegance" (25).

All of these works reflect the existence of a global approach to architecture and town planning, which ultimately indicates a much defined concept of the city. Nevertheless, the different educational and professional backgrounds of the authors and the particular political and economic situations where they were produced reveal some important nuances: they express overall the existence of particular demands. In the case of Patte's work, there is evidently the aim for the set up of a dignifying urban expression of the autocratic French monarchy in a European context. Nevertheless, there is also the search for a convenient urban environment. Paris is pictured as the ultimate example of the enlightened concept of the city: for its architectural excellence and its urban quality. Following different political objectives, Voltaire also

exhorts the building of monumental and emblematic works as a means to dignify the urban environment (26). Gwynn's exhortation is given to the practical effects of a magnificent rationally planned city, as it reflects and promotes a society based on new economic dynamics.

In the different European countries cities were built following particular demands and circumstances. From the baroque equation Monument/Plaza as a dynamic urban force able to recreate the city in terms of a conceptual representation of power, there was a fundamental change: the development of extensive global urban plans articulating aesthetics with the utilitarian demands of a society aiming for progress. This explains the preference given to classical forms, the movement usually named as neo-classicism, as they could be structured as an ordered and flexible combination of architectural elements and therefore were apt to fulfil the demands of urban uniformity and functionality. Thus, the aesthetic proposals of the classical vocabulary served both practical and conceptual premises.

This new concept of the city was not put into practice equally in Europe in the second half of the eighteenth century. It varied according to political, economic, social demands and cultural values. Berlin developed mainly as a fortified and military stronghold from the seventeenth century: baroque and rococo formal elements remained dominant in a city planned by military architects. From 1740, the neo-classical taste replaced baroque, following monumental precepts: in Berlin the monumental character of architecture was a crucial factor in the definition of the physical expression of the city. The same can be applied in other central and eastern European states. Overall, these options reflected the need to confer a symbolic dimension to the urban space, which progressed from the absolutist concept of the spatial and architectural representation of political power to the embellishment proposals of urban magnificence. Vienna was restructured following similar precepts, according to a global outlook to the issue of urban planning; London privileged the classical vocabulary of Palladian proposals and was expanded to the West using planning projects which were implemented and designed in accordance with modern policies – the social and economic elements played a major role in this process; Paris knew an urban redefinition marked by the articulation of spatial and architectural elements which evolved following various aesthetic formulations (from classicism to *rocaille* and to neo-classicism); Bath is a striking example of the new concept of city as it had the privilege of being designed free from previous urban restrictions and balances aesthetic options with functional uses, in a masterly way.

British and Netherlands' town planning proposals and creations reflected mainly the practical side of the new concept of the city. In these two countries

the processes were generated earlier than the main creations of Enlightenment Europe. From the seventeenth century, these two countries developed urban projects, which aimed, fundamentally, for the set up of an urban environment able to respond to the demands of a dominant middle class. This was the case of the rebuilding of London after the Great Fire (1666) and the plans for the urban expansion of Amsterdam (1613 and 1663). The failure to put into practice a general plan for the rebuilding of London reflected a crude reality: it was very difficult to implement general programs in the main European cities as it signified a major financial and juridical task. The colonial world revealed itself as the best field for the new urban projects. Nevertheless, it was in Europe that the new concept of the city required a more urgent implementation in order to readapt, in the heart of the political and economic power, the face of the urban setting. It was also in Europe that the challenge of restructuring the old into the new demanded a more sophisticated social approach, which could only be effective by the implementation of an extensive and rigorous legal and juridical system.

As Richard Cleary points out in his work *La Place Royale*, most of the ideas that give shape to the concept of the city had been maturing since the Renaissance period. Nevertheless, essentially from the mid-eighteenth century, urban theorists and experts envisaged the articulation of all these precepts according to a main concept: the need for a global urban planning in order to serve the well-being of the citizen. In fact, what undoubtedly defines the Enlightened approach to the issue of town planning is the global outlook to the process of urbanisation. The city is regarded not only as a social identity but also as the ultimate expression of a given society. It should, therefore, be planned in order to serve its citizens and to reflect the excellence of a country's cultural standards. Descartes' apology of order and uniformity or Voltaire's exhortation to the accomplishment of embellishment building programs are part of the same conviction that a city is more than a physical settlement. In the second half of the eighteenth century, several architectural and town planning theorists, namely Jacques-François Blondel (b. 1705 - d.1774) and Pierre Patte, discussed the issue of urban embellishment following modern concerns of social progress. Blondel stresses the need to express in the façades the articulation between the buildings' structural design, their interior layout and its use. Architecture should, therefore, combine structure with appearance, ultimately envisaging its function in the city (27). Patte gives, perhaps, one of the most enlightened definitions of this assertion: "If we consider architecture as a whole we perceive that ... we have looked always at the objects as masonry works, whereas they should have been envisaged through philosophy. This is why cities have not yet been suitably arranged for the well-being of its inhabitants; continuously, we are the victims of the same calamities, of the dirtiness, of the bad air and of an infinity of accidents that the harmony of a carefully combined plan would make disappear" (28). This idea is constantly stressed

throughout this period especially by French authors. Laugier expresses the same view: "Most of our towns have remained in a state of neglect, confusion and disorder, brought about by the ignorance and boorishness of our forefathers. New houses have been built but neither the bad distributions of the streets nor the unsightly irregularity of the decorations, made at random and according to anybody's whim, are changed. Our towns are still what they were, a mass of houses crowded together haphazardly without system, planning, or design" (29).

The city is referred to as a conceptual project. It is a utopian vision aiming, nonetheless, for a practical resolution of the main problems, which plagued European cities at the time. In fact, there is the conviction that the city needs to be addressed as a living place. Some of these concerns reveal already a hygienist approach to urban issues. The problem of bad air is expressed even in medieval documents concerning the city. Before the discovery of bacteria (which took place in the late seventeenth century but only knew an extensive scientific research in the second half of the nineteenth century), people believed that narrow and poorly ventilated areas were a hazard for public health, the proximity of rivers and the sea were seen as a positive urban element (30). This notion matured throughout this period, and by the mid-eighteenth century acquired a more precise sense: it became part of a wider problem which saw in the dirtiness of the streets, in the ill-construction of the houses and in the lack of open and green spaces a cause for public concern. The evolution of these ideas was obviously also linked to the contemporary scientific developments. The notion of city became, thus, the result of an array of elements which having as their basis, economic and social changes, incorporated philosophical and scientific premises.

Lavedan gives us an accurate definition of this new concept of the city: "It is, first of all, the one where a notion of the urban ensemble affirms itself, not only the regularity of the plan, but also the monumental homogeneity: a happy general mediocrity is preferable to a juxtaposition of palaces and huts. The public buildings will have easy communications between them; the markets will be well distributed in all of the neighbourhoods. The hospitals will be transferred to the outskirts of the agglomeration, and also the slaughterhouses, the graveyards and the factories. Water will run abundantly through beautiful fountains. The aesthetic rights will be safeguarded by the establishment of squares and churchyards. This ideal city will have, finally, plenty of open spaces, plenty of trees and of long distance views as possible" (31). The author considers all of the fundamental ideas which give form to the concept of the city throughout this period. Nevertheless, he names it as the "ideal city of the classic period": a concept deriving from an aesthetic premise. I believe that the *enlightened city* is, perhaps, a more suitable designation as it reflects, most of all, a philosophical approach to urban issues with a wide

field of action (influence). Also, rather than promoting a *Utopian* approach to the city, with little practical results, the Enlightenment looked at the city as a concrete part of society, which needed urgent adequacy to the new rational ideas. It established conceptual projects aiming, however, to be used following pragmatic interventions. The city was looked upon as a vital part of society, which needed several crucial improvements. The social dimension of the city gained, for the first time in urban history, a projection which enabled a more detailed and systematic approach to urban problems.

With regard to the French situation, Richard Etlin, defines with precision the novel character of the idea of the city: "The image of the city has to be found in the interplay between physical appearance and mental construct. For the eighteenth-century French observer who took an active interest in the quality of the surroundings, the city was a composite of the seen and the imagined, of the real and the potential. This was the age when utopia became uchronia, where the place was not distant but the familiar, and when the time was some future date when the full vision of a transformed habitat would have been realized" (32).

The fascination for Nature and the desire to follow its precepts and its variegated disposition gave shape, at the turn of the century, to a new aesthetic attitude: pre-romantic ideas can even be found in the main Enlightenment texts of the mid-eighteenth century. A fine example of this is D'Alembert's considerations with regard to architecture: "The imitation of *la belle Nature* in Architecture is less striking and more restricted than in Painting or Sculpture. The latter express all the parts of *la belle Nature* indifferently and without restriction, portraying it as it is, uniform or varied; while Architecture, combining and uniting the different bodies it uses, is confined to imitating the symmetrical arrangement that Nature observes more or less obviously in each individual thing, and that contrast so well with the beautiful variety of all taken together" (33).

Despite the evolution of philosophical ideas and the resulting changes in taste, the main structuring ideas of the town planning trend of this period, particularly the concept of the city as social unity, were reinforced. The path was opened to the nineteenth century town planning movements.

By comparing three examples of the town planning process of the early modern Europe, we shall attempt *to visualize* the enlightened system of ideas with regard to the city. Pombaline Lisbon, which was implemented after 1756, the urbanisation of London after the Great Fire (1666) and the building of the New Town of Edinburgh (1767) were chosen as comparative examples.

These three situations reflect the maturation of the new ideas concerning the city and the town planning strategies. They were developed according to specific political and economic scenarios, which despite being diverse can be connected through some fundamental facts: the political and commercial relations between Great Britain and Portugal; the impact that the 1755 earthquake in Lisbon had upon European thought; the example of the rebuilding of London as a source for the strategy to be implemented by the architects who planned the new Lisbon and the interest that the rebuilding of this capital city raised amidst some of the most important European architects at the time, as it was the case of Robert Adam (b.1728 – d.1792), who was latterly linked to the development of the New Town of Edinburgh.

However, more than exploring direct historical links between these three situations (which, nevertheless, existed and will not be disregarded in this study) and having Pombaline Lisbon as the central study case, parallels, lines of coincidence and/ or contradiction will be drawn, in order to establish and test empirically a model of the Enlightened city, which the politicians and social and urban reformers tried to superimpose in eighteenth century Europe.

## Notes

### 1. In search of a definition of a city

1. "The very fact that in drawing these distinctions we are led to use the concepts of an 'urban economic area' and 'urban area', and 'urban authority', already indicates that the concept of the 'city' can and must be examined in terms of a series of concepts other than the purely economic categories so far employed" - Weber, Max, *The City* (1958), p. 74.

2. See Braudel, Fernand, *Capitalism and material life, 1400-1800* and "Pre-Modern Towns", *The Early Modern Town* (1976).

3. Bird, James, *Centrality and Cities* (1977), p. xiii.

4. Abrams, Philip and Wrigley, E.A., *Towns in Societies* (1978), p. 9.

5. See Castells, Manuel, *La Question Urbaine* (1977), p. 21. This author considers this hypothesis as "confusion between the 'urban' problematic and a given socio-cultural organisation".

6. Braudel, "Pre-Modern Towns", *The Early Modern Town* (1976), p. 53.

7. See Braudel, *op. cit.*. The author quotes Herodotus in relation with "the millets-eaters north of the Black Sea who grew corn for the Greek Cities".

8. Castells, *op. cit.*, p. 23.

9. Benevolo, Leonardo, *The European City* (1993), p. XVII.

10. Bird, James, *op. cit.*, p.28.

11. Martindale, Don, preface to Weber, Max, *The City*, p. 9.

12. Benevolo, *op. cit.*, p. XVIII.

### 2. Urban growth: Ports and Capital Cities

1. Braudel, Braudel, Fernand, "Pre-Modern Towns", *The Early Modern Town* (1976).
*Ibidem*, p. 65.

2. De Vries, "Patterns of urbanization in pre-industrial Europe, 1500-1800" *Patterns of European Urbanisation since 1500* (1981).

3. Hohenberg, Paul and Lees, Lynn, *The Making of Urban Europe 1000-1950* (1985), p. 109.

4. *Idem*, p. 161.

5. Argan, Giulio, *L'Europe des Capitales 1600-1700* (1965), p. 34: "La grande creation politique du XVIIe siècle est l'État national, dont la forme charactéristique est la monarchie

absolue. L'Europe moderne surgit alors comme un système d'États cherchant à équilibrer leurs forces politiques et économiques".

6. Mumford, Lewis, *The City in History* (1961), p. 367.

7. Braudel, *Ibidem*, p.78.

8. Braudel, *Ibidem.*

9. Sutcliffe, A., "The Giant City as a Historical Phenomenon", *The Giant City in History* (1993), p. 9.

10. Braudel, *Ibidem*, p.90.

11. Sutcliffe, A., *Idem*, p. 5.

12. The first volume of the engraving album *Civitates Orbis Terrarum* by G. Braun and F. Hogenberg (Colónia, 1572) includes both cities. These engravings, which were made with a notable accuracy for the period, are a valuable document of the cities' urban structure at the time (**See Illustration 17**, p. 86).

13.Sutcliffe, *Ibidem.*, p. 7.

14. Bairoch, Paul, "Urbanisation and economic development in the western world: some provisional conclusions of an empirical study", *Patterns of European Urbanisation since 1500* (1981), p. 65.

15. "Even the appropriateness of the term 'industrial revolution' has been questioned, and most of those two centuries are now sometimes referred to as a period of proto-industrialization. In this new historiographical landscape London has a more prominent place"- Sheppard, Francis, *London a History* (1998), p. 224.

16. Roncayolo, Marcel and Paquot, Thierry (eds.), *Villes et Civilisation Urbaine (XVIIIe-XXe siècle)* (1992), pp. 12-13: "Longtemps, à tort du reste, on a cru que l'urbanisation était couplée avec l'industrialisation. Les deux processus n'ont formé l'attelage de la modernité qu'après un démarrage autonóme".

17. See Saraiva, António José e Óscar Lopes, *História da Literatura Portuguesa*, (1985): "Foi ainda na Holanda mercantil seiscentista, refúgio de judeus peninsulares (entre os quais o cristão –novo português Uriel da Costa, que negou a imortalidade da alma, nos primeiros anos do século XVII), huguenotes franceses, dissidentes ingleses, que se caldearam muitas das inovações ... que ... servirão de evangelho principal do "derramamento das luzes" do século XVIII"- pp. 589-590.

18. Trade was flourishing in the Iberian Peninsula in the late medieval period giving structure to a new social group. This emergent social class was mainly composed by Jews and was becoming increasingly important in the economic life of Portuguese and Spanish society at the time. However, their expulsion from the Peninsula in the sixteenth century, and the subsequent religious persecution of the remaining elements who had decided to stay and to convert to the catholic faith, represented a serious blow to the formation of a strong middle class able to manage trade and its resulting activities as autonomous economic forces - Quoting Vitorino Magalhães Godinho: "A ordem tradicional via que só na riqueza fundiária se alicerçava a sua durabilidade, batida em brecha pelo desenvolvimento da crematística, da busca da riqueza mobiliária como fim em si própria" (The *status quo* believed that its survival could only be maintained by the wealth based upon the landed property, which was being

beaten by the development of the trade, of the search for the movable wealth as an end in itself", *Os Descobrimentos e a Economia Mundial* (1963), p. 54.

19. Sjoberg, "The nature of the pre-industrial city", *The Early Modern Town* (1976), p. 43.

## 3. Town planning in pre-modern Europe

### 3.1 Town planning as a concept

1. Ashworth, William, *The Genesis of Modern British Town Planning* (1954), p. I.

2. "Ciência e técnica da construção e do ordenamento dos aglomerados populacionais, cidades e aldeias" - *Nova Enciclopédia Larousse*, Círculo de Leitores (1999)

3. *The New Encyclopaedia Britannica*, vol. 12.

4.Sutcliffe, A.,*Towards the Planned City* (1981), p. 204.

5. "Au lieu d'être l'oeuvre de généralistes (historiens, économistes ou politiques), il est sous ses deux formes, théorique et pratique, l'apanage de *spécialistes*, le plus généralement d'architectes. (...) Au lieu d'être cantonné dans l'utopie, l'urbanisme va assigner à ses techniciens une *tâche* pratique" - Choay, Françoise, *L'Urbanisme Utopies et Réalités* (1965), p. 30.

6. "En effet, l'urbanisme entendu dans son sens le plus banal, le plus concret, consiste à organiser l'espace de la ville, à l'entretenir, à l'améliorer, à le gérer" – Roncayolo, Marcel et Paquot, Thierry (eds.), *Villes et Civilisation Urbaine (XVIIIe-XXe siècle)* (1992), p. 15.

7. Sutcliffe, *op. cit.*

8. "Alors que le pré-urbanisme avait été lié à des options politiques tout au long de son histoire, l'urbanisme est *dépolitisé*"- Choay, Françoise, *op. cit.*, p. 30.

9. "Circulation, embellissement, hygiène viennent constituer les trois vertues attendues d'une ville nouvelle ou renouvellé: un leitmotiv qui'abandonera pas de sitôt l'esprit des édiles et fonde, sans doute, à distance, la transformation de l'art urbain en urbanisme" Roncayolo, Marcel et Paquot, Thierry (eds.), *op. cit.*, p. 15.

### 3.2 Utopia and *Praxis*: the Renaissance and the Baroque approach to the city

#### 3.2.1 The ideal city

1. More, Thomas, *Utopia*, p. 134

2. Dickinson, Robert, *The West European City* (1962), p. 424.

3. Argan, G., *The Renaissance City* (1969), p. 13.

4. Argan, G., *op. cit.*, p. 106.

5. *Idem.*

6. *Ibidem*, p. 107.

## 3.2.2 The contribution of military engineering

1. De la Croix, Horst, *Military Considerations in City Planning* (1972), p. 10.

2. "La géométrisation des tracés, qui est la caractéristique absolue des traités d'architecture et d'urbanisme, ne doit pas être rapprochée, et encore moins déduite mécaniquement, de l'elaboration d'un modèle social, même si les deux faits se recoupent dans la réalité et s'influencent réciproquement. La rigueur croissante des schémas planimétriques et figuratifs dépend sans aucun doute de cette expérience décisive qu'est la nouvelle architecture militaire: c'est elle qui impose pour toutes les parties de la ville le principe de la régularité ainsi que la nouvelle et rigoureuse loi de symétrie" - Marino, Ângela, "Utopies Urbaines et Construction de la Ville dans la Culture Architecturale du XVIe siècle en Italie", *L'Idée de la Ville* (1984), pp. 91-92.

3. "Il est donc simpliste et méthodologiquement faux d'envisager les rapports complexes et ambigus existant entre les diverses composantes de la ville idéale à partir, comme on le fait habituellement, des normes d'urbanisme contenues dans les traités ou, ce qui est encore pire, à partir des modéles formels que l'on confronte avec des réalisations particulières. Un ensemble de normes était en train d'apparaitre et de s'élaborer à la suite des expériences des architectes et des ingénieurs militaires" - Marino, Angela, *op. cit.*, p. 94.

## 3.2.3 The Baroque program

1. The Portuguese navigators were the first to be confronted with geographical realities that contradicted the classical based knowledge of the world: "que a melhor parte do saber de tantas regiões e províncias ficou para nós, e nós lhe levámos a virgindade ... e nestas cousas a nossa nação dos Portugueses precedeu todolos antigos e modernos em tanta quantidade, que sem repreensão podemos dizer que eles, em nosso respeito, não souberam nada" ("The best part of the knowledge of so many regions and countries was left to us, and we took its virginity ... and the Portuguese nation preceded all the modern and the ancient by so far that we can affirm, without being contradicted, that they, by comparison, did not know anything") - Duarte Pacheco Pereira, *Esmeraldo de Situ Orbis* (1505-1508). See António Sérgio, *Ensaios*. Vol. II (1972), pp. 30-34, some Italian sailors who accompanied the Portuguese in their voyages wrote also about the fragility and incorrectness of the works of the ancient Greeks.

2. "Medir o mundo e codificá-lo em desenho é um dos maiores feitos científicos da Idade Moderna e exigiu uma capacidade de abstracção única que não pode ter surgido do nada nem de um dia para o outro. A meu ver, e isto é meramente uma intuição resultante do conhecimento do processo de ordenamento do território medieval no período que atrás referi, tal potencialidade desenvolvia-se há muito" - Rossa, Walter, "O Urbanismo Regulado e as Primeiras Cidades Coloniais Portuguesas" (1999), p. 525.

3. See Carita, Helder, *Lisboa Manuelina e a Formação de Modelos Urbanísticos da Época Moderna* (1999). Also, there are some important examples of the use of the grid-plan in the foundation of new European urban settlements at the time: "Particularly there was a striking advance in the use of the pattern in the thirteenth century. In this century at least one urban unit using the grid was made by Italians in Sicily. The Germans, in establishing cities on the Slavic frontiers and beyond, such as some of those in Prussia, Breslau, and Cracow, used this plan as their basis" - Dan, Stanislawski, "The Origin and Spread of the Grid-Pattern Town" *The*

*Geographical Review*, vol. XXXVI (1946), p. 118. Aigues-Mortes in France is another example of the use of the grid-plan in the thirteenth century in order to establish a new urban centre with only military purposes.

4. Mumford, Lewis, *The Culture of Cities* (1938), p. 77.

5. Benevolo, Leonardo, *The European City* (1993), p. 127.

6. Marino, Ângela, "Utopies Urbaines et Construction de la Ville dans la Culture Architecturale du XVIe siècle en Italie", *L'Idée de la Ville* (1984).

7. See Machiavelli, Niccolò, *Il principi* (written in 1513).

8. Dickinson, R.E., *The West European City* (1962), p. 418.

9. From an early period (early seventeenth century), the Jesuits developed in their South American missions a regular urban pattern, developing from a central square, which were based on the Renaissance proposals of the "ideal cities". See Rodrigues, Jorge, "Colégios Jesuíticos em Portugal: do discurso à utilidade" *Anais do X Simpósio Nacional de Estudos Missioneiros*, UNIJUÍ, 1994.

10. Charre, Alain, "De l'invention de la Cité Moderne a l'Urbanisme: une introduction", *L´Idée de la Ville* (1984), p. 89: ""elles sont de l'ordre du schéma dont l'abstraction géométrique efface tout risque".

11. Stanislawski, Stan, *op. cit.*, 108.

12. "Para além das múltiplas questões já abordadas, das quais destaco a opção de índole mercantilista que leva a que Portugal, numa primeira fase, tenha no mar o verdadeiro território do seu Império, registe-se como a colonização/conquista empreendida pelos monarcas espanhóis do império asteca é o prolongamento da Reconquista ibérica concluída pelos Reis Católicos em Granada" - Rossa, Walter, *op. cit.*, p. 526. See also Araújo, Renata, "Engenharia Militar e Urbanismo" *História das Fortificações Portuguesas no Mundo* (1989), pp. 255-272 and Delson, Roberta, *New Towns for Colonial Brazil ...* (1979).

13. Bacon, Edmund, *Design of Cities* (1967), p. 171.

14. Mumford, Lewis, *op. cit.*, (1938), p. 78.

15. Mumford, Lewis, *Idem*, p. 77.

16. Saisselin, Rémy, *The Enlightenment Against the Baroque* (1992), pp. 3-4.

17. Pollak, Martha, *Turin* (1991), p. 5.

18. Pollak, Martha, *op. cit.*, p. 10.

## 3.3 The Enlightened city

1. Pagden, Anthony, "Prologue: Europe and the World Around" *The Early Modern Europe* (2001), pp.19-20.

2. "Todas as nações da Europa se aumentaram, e aumentam ainda hoje, pela recíproca imitação. Cada uma vigia cuidadosamente sobre as acções que obram as outras. Assim,

fazem toda própria, mediante a informação dos seus ministros, a utilidade dos inventos alheios" – *Carta ao Cardeal da Mota, 19 de Fevereiro de 1742* ("Letter to Cardeal da Mota, 19 February 1742"). See Barreto, José (edit.), *Sebastião José de Carvalho e Melo – Escritos Económicos de Londres (1741-1742)* (1986), p. 158.

3. "Fazendo presente a Sua Magestade a consulta do senado, de 20 do mês passado, sobre a ruína que ameaçava a parede do convento dos padres quentães, e o perigo a que estavam expostos os que passavam pela rua Nova da Armada [Rua Nova do Almada] para o Chiado, foi o mesmo senhor servido considerar, com a sua alta comprehensão, que, sendo hoje a maior passagem da côrte por aquelle sitio, que se fazia preciso alargar a rua Nova da Armada [Rua Nova do Almada], para cima da egreja dos ditos padres, e o Chiado; para o que ordena que o senado mande fazer uma vistoria pelo vereador do pelouro das obras, o architecto Eugenio dos Santos e os mestres da cidade, para se fazer a planta pelo dito architecto ..." – *Aviso do Secretário de Estado Diogo de Mendonça Corte-Real ao Presidente do Senado de 9 de Agosto de 1753* (*Notice from the Secretary of State, Diogo de Mendonça Corte-Real, to the President of the City Council Senate, August 9, 1753*), Liv.º IV de Consultas e Decretos D.José I, fl. 68 - AHCML.

4. Langford, Paul, *A Polite and Commercial People (England 1727-1783)* (1989), p. 7.

5. See Murteira, Helena, *Lisboa da Restauração às Luzes* (1999), p. 114 - "Dois conceitos estruturam todo o discurso camarário - a *formosura da cidade* e a *utilidade pública*. A origem deste tipo de argumentação é remota, mas cremos que a sua aplicação se vai modelando à evolução do pensamento urbanista. Pensamos que nela se contém o essencial da linha condutora que enforma a teoria e a prática de intervenção citadina nesta época". ("Two concepts structure all the city council's discourse - the *beauty of the city* and the *public convenience*. The origins of this type of argumentation is ancient, but we believe that its application was moulded to the evolution of the town planning thought. We think that in it resides the essential of the structuring line of thinking which shapes the theory and the practice of the urban intervention throughout this period").

6. Newton, Isaac, *Philosophiae Naturalis Principia Mathematica* (1st edition: 1687), electronic copy: http://members.tripo.com/~gravitee/rules.htm

7. *Essay Concerning Human Understanding* (1st edition: 1689) Book I, ch. II.

8. Hampson, Norman "The Enlightenment in France" *The Enlightenment in National Context* (1981), p. 41.

9. Hampson, *op. cit.*, p. 43.

10. Porter, Roy, "The Enlightenment in England" *The Enlightenment in National Context* (1981), p. 16.

11. See Scott, H.M., *Enlightened Absolutism. Reform and Reformers in later Eighteenth Century Europe* (1990).

12. Porter, Roy, *op. cit.*, p. xxiii

13. Scott, H.M., *op. cit.*, p. 18.

14. "Si nous prennons les *Lettres Philosophiques* de Voltaire nous voyons immédiatement de quel secours lui est l'Angleterre pour s'en prendre à l'absolutisme de droit divin dont il vient d'éprouver les rigueurs en France. C'est Londres qu'il observe, mais c'est Paris qu'il vise. Et il vise si bien qu'il nous donne un texte essentiel pour comprendre la genèse de la cité séculière

des Lumières" - Baridon, Michel, "La cité des Lumières et l'homme selon la nature dans les Lettres Philosophiques", *The Secular City* (1994), pp. 57-58.

15. See Schorske, Carl E. "The Idea of the City in European Thought: Voltaire to Spengler", *The Historian and the City* (1996), p.96.

16. Translated to English from the Portuguese edition - Descartes, *Discurso do Método / As Paixões da Alma* (1986), p. 12.

17. Langley, Batty, *The Builder's Treasury* (1740), p.iii.

18. "A disposição desta obra he que proponho em primeiro lugar hua facillima practica, tal que por ella saberà qualquer soldado facillima, & brevissimamente desenhar todo o genero de Fortificaçoens, ... sem que lhe seja necessario saber Geometria, nem Arithmetica, mais que multiplicar, & repartir por hua, ou duas letras para o desenho, que he em que consiste o acerto, ou erro da obra" - Pimentel, Luís Serrão, *Methodo Lusitanico de Desenhar as Fortificaçoens das Praças Regulares & Irregulares* (1680), 1st Part.

19. Chambers, William, *A Treatise on Civil Architecture* (1759), Preface, p. IV.

20. Chambers, *op. cit.*, Preface, p. I.

21. "Par tout ce que nous venons de dire, il est aisé de remarquer que nos arts ajoutent à ce règne une grandeur & un éclat, qu'on ne remarque nulle autre part. Ils ne le cèdent qu'à notre literature. Nos bons ouvrages en tout genre font plus que jamais les délices de l'Europe. Paris, cette ville si opulente & si peuplée, doit donc être regardée comme la première ville du monde, comme le centre du bonheur & du génie" – Patte, *Monuments érigés ...* (1765), p. 68.

22. "Nous n'avons point encore d'Ouvrage qui établisse solidement les principes, qui en manifeste le veritable esprit, qui propose des règles propres à diriger le talent et à fixer le goût. Il me semble que dans les arts qui nes sont pas purement mécaniques, il ne suffit pas que l'on sache travailler, il emporte sur-tout que l'on aprenne à penser" - Laugier, *Essai sur l'Architecture* (1753), Preface, p. xxxiv.

23. Picon, Antoine, *French Architects and Engineers in the Age of the Enlightenment* (1988).

24. Picon, Antoine, *op. cit.*, p. 2.

25. Gwynn, *London and Westminster Improved* (1766), pp. XIV-XV.

26. Voltaire, *Des Embellissements de Paris* (1749) and *Des Embellissements de la ville de Cachemire* (1750) – *Complete Works of Voltaire*, Voltaire Foundation (Oxford, 1968 - ), tome 31B, pp. 199-233 and pp. 235-261.

27. Blondel, Jean-François, *Architecture Françoise* (1752-1756). *Cours d'architecture ou Traité de la Décoration, Distribution & Construction des Bâtiments* (1771-1777).

28. "Si l'on considère l'architecture dans le grand on se aperçoit que ... l'on a vu sans cesse les objets en maçon, tandis qu'il eût fallu les envisager en philosophie. Voilá pourquoi les villes n'ont jamais été distribuées convenablement pour le bien-être de leurs habitants; perpétuellement, on y est la victime des mêmes fléaux, de la malpropreté, du mauvais air et d'une infinité d'accidents que l'entente d'un plan judicieusement combiné eût fait disparaître" – Patte, *Mémoires sur les objets les plus importants de l'Architecture* (1769).

29. Laugier, Marc-Antoine, *op. cit.*, pp. 209-211.

30. See Carita, Helder, *op. cit.* and Murteira, Helena, *op. cit.* where this subject is addressed concerning the study of Lisbon.

31. "C'est d'abord celle ou s'afirme la notion de l'ensemble urbain, non seulement la régularité du plan, mais l'homogénéité monumentale: une heureuse médiocrité générale est préférable à une juxtaposition de palais et the taudis. Les édifices publics seront en communications faciles les uns avec les autres; les marchés bien distribués dans tous les quartiers. Les hôpitaux seront transférés à la péripherie de l'agglomération, de même les abatoirs, les cimetières et aussi les usines. L'eau coulera en abondance par de belles fontaines. Les droits de l'esthétique seront encore sauvegardés par l'établissement de places et de perspectives monumentales, notamment de places Royales et de parvis devant les églises. Cette ville idéale comportera enfin beaucoup d'espaces libres, beaucoup d'arbres et de vues lointaines dans la mesure du possible" - Lavedan, *Histoire de l'Urbanisme. Renaissance et Temps Modernes* (1959), pp. 201-202.

32. Etlin, *Symbolic Space (French Enlightenment Architecture and its Legacy)* (1994), p. 1.

33. D'Alembert, *L'Encyclopédie ... Preliminary Discourse*. Paris: Flammarion, 1986, p. 104.

# A PLACE FOR LISBON IN EIGHTEENTH CENTURY EUROPE: Lisbon, London and Edinburgh, a town-planning comparative study

(vol. 2)

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Declaration

This thesis has been conceived and composed by the candidate.

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## PART II – LISBON, LONDON AND EDINBURGH: THREE EXAMPLES OF URBAN PLANNING[1]

Pombaline Lisbon, the urban development of London after the Great Fire and the New Town of Edinburgh represent three significant examples of town planning programs in early modern Europe.

To understand the links between these three situations it is important to retain the following facts:

- Portugal and England reinforced and extended old political alliances in the seventeenth century. Portugal needed a strong political and military ally in order to keep its recently regained independence from Spain. England saw in this circumstance an opportunity to weaken France and Spain's threats to their claims to a leading economic role in Europe. As a result of this political *partnership*, both countries signed several commercial treaties (namely in 1642, 1654 and 1703), which strongly influenced and restricted Portugal's economic development up until the nineteenth century. These documents promoted an unequal treatment of the Portuguese and British merchants and conditioned the implementation of a manufacturing system in Portugal. As a result, a large community of British merchants established themselves in Portugal, essentially in Lisbon. This group of traders commanded and controlled a significant proportion of Portugal's colonial and European trade up until the early nineteenth century. This situation triggered the economic project which the Portuguese Prime Minister, Sebastião José de Carvalho e Melo (b.1699 - d.1782), later Marquis of Pombal (*Marquês de Pombal*), tried to develop in Portugal in the second half of the eighteenth century. This project aimed for the implementation of national manufactures and the establishing of monopolistic trade companies controlled by the State in an attempt to overturn foreign economic dominance over Portugal. Sebastião José de Carvalho e Melo, as an Envoy Extraordinary to London between 1738 and 1744 and to Vienna between 1745 and 1749, had the chance to directly observe the British and Austrian economic and social systems and from there he structured the main ideas of his project;

- Both London and Lisbon were capital cities and important economic centres, controlling and managing an extensive long-distance trade. This situation shaped their own development and gave to both of them, particularly in the case of Lisbon, a distinct urban image;

[1] Notes p. 121

- The Lisbon Earthquake of 1755, which destroyed the entire city centre, was major news at the time. The catastrophe of Lisbon influenced European enlightened thought: Voltaire's texts, *Poème sur le Dèsastre de Lisbonne* (1756) and *Candide ou L'Optimisme* (1758) were the most important works of the many published about the event. Lisbon's destruction also represented an important setback for the British merchants – apart from the lost merchandises, they suffered a tremendous blow with the loss of all the letters of credit passed to Portuguese merchants. If we are to believe British estimations at the time, the British merchants lost around eight million pounds sterling and the Portuguese merchants only approximately five hundred thousand (1). As a result of this situation, to which ought to be added the decline of the Brazil trade after 1760 and the new economic measures put into practice by the Portuguese Crown, the British merchants never regained their old status in Portugal.

- The Scottish architect Robert Adam was travelling in Europe when this tragedy struck Lisbon and made some sketches for the rebuilding of the city. In the letters sent to his sisters in Scotland, Robert Adam expresses his enthusiasm about the wide-ranging town planning possibilities of such a situation and reveals the aspiration to be selected by the king of Portugal to design the new plan.

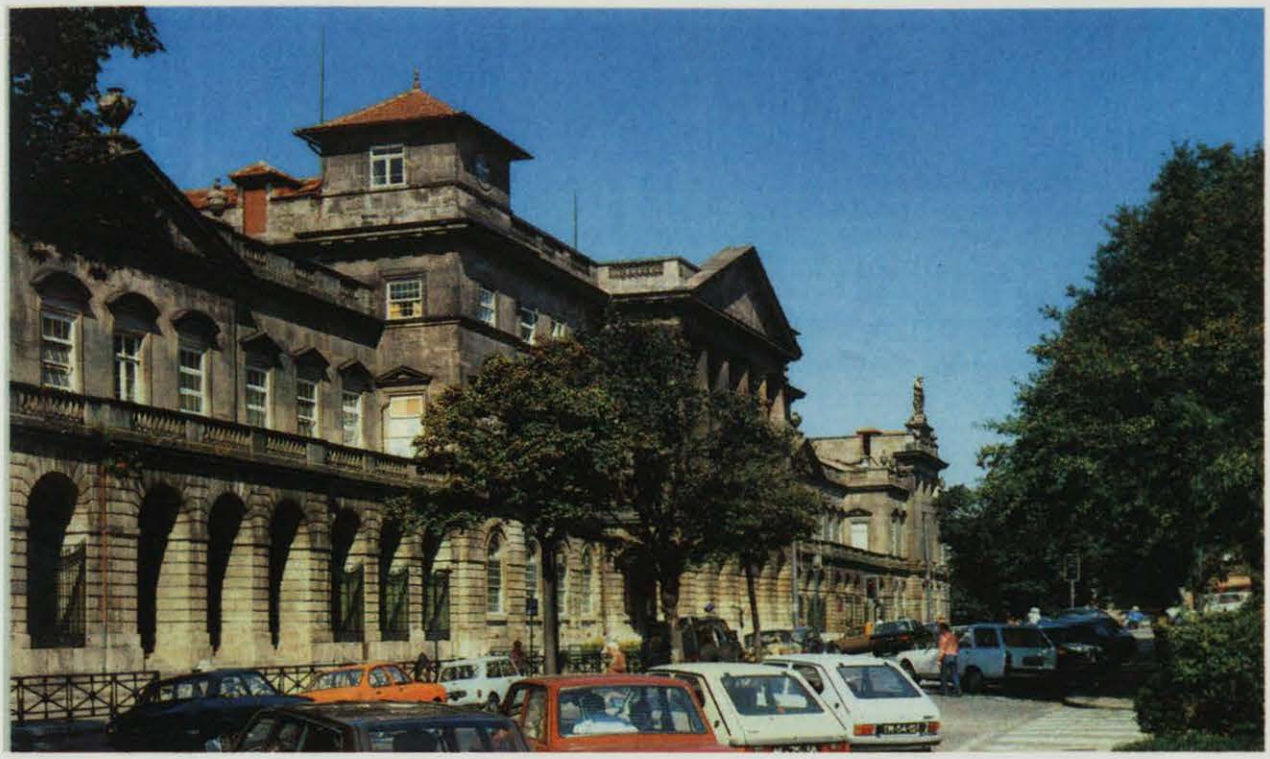
In order to better place Pombaline Lisbon in the eighteenth century European scenario, a brief but thorough account of the relationship between Portugal and pre-modern Europe will be included following some significant political, economic, cultural and artistic aspects. Ultimately, this chapter will attempt to outline the main structuring ideas of enlightened thought in Portugal and its relationship with architecture and town planning in the country.

## 1- Portugal in a European context

### 1.1- Politics and economy: the Portuguese and British relationship[2]

Portugal and England were linked from the medieval period by a succession of political and military alliances to which were added, from the seventeenth century, some important commercial treaties: "The Anglo-Portuguese alliance, of which the origins can be traced back to the time of the crusades, and which lasted practically during the whole medieval period, is almost unique in the history of the Middle Ages for the care with which it was maintained, for its popularity in both countries, and for its beneficial results to both parties" (1). If the political alliance between the two countries equally favoured both counterparts, the resulting commercial pacts were not as

[2] Notes p. 121



8. **Sto António Hospital**, Porto (1770 - foundation stone). Architect: **John Carr**. Published in *História da Arte em Portugal – Neoclassicismo e Romantismo*. Vol. 10. Lisboa: Publicações Alfa, 1986.

9. **English Factory,** Porto (1785 - foundation stone). Architect: **John Whitehead** (British Consul at the Court of Portugal). Published in *História da Arte em Portugal – Neoclassicismo e Romantismo* (1986).

impartial. The latter were in great measure responsible for the fate of Portugal's economy until the mid-nineteenth century. The first significant treaty dates to 1353 and several followed throughout the fifteenth century. The Portuguese war of independence against Spain, a period known as the Restoration (mid-seventeenth century), strengthened these political ties. The Portuguese and English political alliance was reinforced by two royal marriages: in the late thirteen hundreds, the Portuguese Crown was linked to the house of Lancaster; in 1661, the Marriage Treaty between Charles II (b. 1630 – d.1685) and the Portuguese princess D.Catarina de Bragança (b. 1638 – d.1705) sealed the renewal of the Portuguese and English alliance.

Despite connecting the destinies of these two countries well into the nineteenth century, these alliances were never responsible for a strong cultural and artistic interchange between Portugal and England. The result was mainly of a political and economic nature: "It cannot be claimed that Portuguese culture has ever exercised any influence in England - or, indeed, aroused much interest here until the last few years. Similarly, Portugal, as a Latin country, looked rather to Spain, Italy and France for her ideas and ideals. (...) It was particularly useful in commerce, since the economies of the two countries are complementary", wrote Charles Boxer in 1961 (2). Boxer is fundamentally right in his statement. However, some connections can be traced between the two cultural and artistic scenes, e.g. the British contribution to the neoclassical architectural movement in Porto: this northern Portuguese city has harboured a large community of British wine traders since the early eighteenth century who have contributed to the city's cultural production since then. The building of the Santo António Hospital and the British Factory House (plan: 1786) at the end of the eighteenth century, both projected by English architects – John Carr (b. 1723 – d. 1807) and the British consul John Whitehead (from 1756 to 1806) – gave expression to the first neoclassical movement in Porto (3) (**Illustrations 8 and 9**).

Recent works have studied in more detail the repercussion of the Portuguese and British alliance on the artistic scene of Portugal and have been able to reveal an interesting picture: "During the comings and goings of the last eight hundred years countless works of art have made their way from England to Portugal, brought by the citizens of both countries who played their part in trade, diplomacy, royal marriages, tourism, military cooperation, and business ventures. Buildings designed by British architects have changed the look of some Portuguese cities (...). Here in Portugal there are many fine private collections of English furniture, porcelain, silver and paintings, (...) and a study would fill several volumes" (4).

The influence of the Portuguese culture in England is a less well-known subject, which deserves a serious study. The presence in Portugal of British merchants and soldiers on various occasions, from the mid-seventeenth century to the Napoleonic wars, was responsible for the exit of works of art from Portugal to England.

Apart from the subject of the cultural interchange, it is unquestionable that the Portuguese and British political alliances and commercial treaties were responsible for a number of important factors, which had a considerable impact on the Portuguese and British societies. The pragmatic and enterprising British system was a source of inspiration for the Portuguese progressive minds of the eighteenth and nineteenth centuries and Portugal was very much receptive to British scientific and technological influence throughout that period (5). In fact, with regard to the Portuguese society, the following statement is especially illustrative of the effects of the political and economic relationship established between the two countries: "(...) if culture came from France and Italy, civilization came from England" (6).

In 1642, a peace and commercial treaty was signed between Portugal and England. This treaty advocated the establishing of equal trade rights for both countries. However, it awarded important privileges to English merchants in the Portuguese trade and in Portugal, namely the right to trade on the coast of Africa and the assurance that the former would not be persecuted for their religious beliefs.

It is, nevertheless, the peace treaty signed between the Portuguese Crown and Cromwell's Protectorate in 1654 that contains the most relevant commercial articles: it states that English merchants were, from that date on, only obliged to pay 23% of the custom rights upon any merchandise and also indicates that in case of dispute, two English merchants, residing in Portugal, appointed by the English Consul, were to act as appraisers. These privileges were also to be applied to Portuguese merchants resident in England. Nevertheless, the disparity between the number of Portuguese merchants living in England (only a few, some authors refer to two or three families) and the vast number of English merchants living in Portugal, to which ought to be added the fact that the English authorities never really implemented this article in their own country, led to a British privileged position in all of the Portuguese trade (7). With regard to this unequal treatment of the British and the Portuguese merchants, Sir Richard Lodge states the following, based on a letter from Newcastle (Thomas Pelham-Holles, Duke of Newcastle, b. 1693 – d. 1768) to Tyrawly (James O'Hara, 2nd Baron Tyrawly, Ambassador to Portugal from 1728-1741 and 1752-1757) on 20 November, 1739: "Carvalho [the Marquis of Pombal] had shown resentment at the absence of any reciprocity to Portuguese traders for the privileges enjoyed by Englishmen in Lisbon and Oporto, and he was not impressed by the ingenious argument of Newcastle that, as England had parliamentary government and Portugal had not, the Portuguese must submit to a curtailment of their privileges without any right to retaliate upon British residents in Portugal" (8).

The Commercial Treaty of 1703, usually known as the Methuen Treaty, established economic links between the two countries which lasted until 1835. This treaty was concise but with important economic implications: Portugal was bound to accept English woollen goods until resolved otherwise and

England would have to accept Portuguese wines with a 1/3 reduction of the custom rights.

As a result of these two treaties, Portuguese trade, particularly the Brazilian trade, became an important asset of the British economy: "It was a fortunate coincidence for the English that the country, which by virtue of having discovered the long-sought sea route to India, emerged at the end of the fifteenth century into the foremost rank of the commercial nations of the world, was one with which their government was so firmly in alliance, and in which they had already received valuable royal grants of trading privileges and exemptions from taxes" (9).

The importance and magnitude of the Portuguese Discoveries in the fifteenth century, which culminated with the Discovery of Brazil in 1500, and the extensive trade that resulted from these enterprises were acknowledged by the British enlightened thinkers. Adam Smith (b.1723 – d.1790) wrote "The great profits of the Venetians tempted the avidity of the Portuguese. They had been endeavouring during the course of the fifteenth century, to find out by sea a way to the countries from which the Moors brought them ivory and gold dust across the Desert. They discovered the Madeiras, the Canaries, the Azores, the Cape de Verde islands, the coast of Guinea, that of Congo, Angola, and Loango, and, finally, the Cape of Good Hope. (...) In 1497, Vasco da Gama sailed from the port of Lisbon with a fleet of four ships, and, after a navigation of eleven months, arrived upon the coast of Indostan, and thus completed a course of discoveries which had been pursued with great steadiness, and with very little interruption, for near a century together" (10).

The avant-garde character of the Portuguese expansion in the fifteenth century with regard to the new horizons opened to European trade and scientific development had lost most of its attributes by the late sixteenth century. The Portuguese society was a paradigmatic example of the tensions and imbalances caused by the social and economic changes taking place in early modern Europe. Despite the strategy developed by a centralized monarchy in order to promote, first of all, an extensive and profitable commerce, the Portuguese social, cultural and religious scenario, deeply rooted in the traditional supremacy of the aristocracy and of an all powerful church, did not allow the flourishing of a middle class able to control a vast and rich trade. A stream of elements concurred to produce this situation: a change in the religious policy of the Crown, mainly by the pressure of the Spanish Catholic rulers, led to the expulsion in 1497 of all the Jews who did not adopt the Catholic faith. This began a process of religious persecution which was intensified by the establishment of the Inquisition tribunal (1536) and the Counter Reformation; Jews and Protestants became the main targets of a general animosity which had both a religious and social character. The great influence of the Church in all of the areas of society, especially, in the political scene and, finally, the social privileges of a traditional aristocracy whose supremacy was based in the landed propriety. The loss of dynastic

independence to Spain in 1580, heightened Portugal's social and economic debilities. At first, the Spanish Crown apparently promoted the "Union Act" established in 1580 between the two Crowns. However, at the end of the first half of the seventeenth century (1620), fundamentally as a result of the failing Spanish political and economic supremacy in Europe, this policy had changed and Portugal was used as a mere colony and was slowly deprived of its assets.

Portugal regained its political autonomy with the conspiracy of the Braganza family on the 1 December 1640 and fought to maintain it up until 1668, when a peace treaty was finally signed with Spain. At the end of the seventeenth century, the Portuguese Crown was trying to recover from the financial hardship that twenty years of war had caused and from the effects of the economic recession afflicting Europe at the time. However, despite the damaging economic effects of the last years of the Spanish sovereignty and the strenuous war effort, the Brazilian sugar trade was able to maintain a certain degree of financial prosperity throughout this period. The echo of the Mercantilist ideas, which were spreading in Europe, reached Portugal and efforts were made to reverse the deficit of the Portuguese balance of trade. Several measures were taken by the Crown in order to promote the development of manufacturing in the country. The Earl of Ericeira, (D. Luís de Menezes, 3rd Earl, b. 1632 - d.1690) prime minister to king D. Pedro II (1648-1706), conceived and implemented these actions: "During the late seventeenth century the *ancien régime* in Portugal encountered difficulties which fostered tentative movement toward fundamental socio-economic change. Largely in response to a lengthy recession which depressed economic activity throughout Europe after 1670, the government of D.Pedro II (1683 -1706, b. 1648) contemplated a variety of mercantilist programs as it sought to cope with a worsening situation. These measures included proposed financial support from New Christian merchants (Jews converted to the Christianism), establishment of domestic manufactures, and numerous projects designed to extract greater revenues from Portugal's farflung colonies" (11). Nevertheless, these first attempts to integrate Portugal in the economic European forefront failed, as they were not backed by a social structure opened to the repercussions of the new economic order: "Portuguese society had simply not reached a stage in its development where an unfettered mercantile class or an industrial mode of production could be tolerated or sustained" (12). The Methuen Treaty, signed in 1703, represented the final blow to the new and incipient manufacturing system: the obligation to buy English textiles thereafter severely retarded the development of a Portuguese national production.

At the turn of the century, the sudden influx of Brazilian gold and diamonds altered substantially the Portuguese Crown's financial situation. The flourishing trade coming from Brazil was envied by other European States, which saw in the Portuguese commerce a potential element for their own economic development. The British merchants led this process, using the old political alliance as a means to obtain a privileged place in this trade network.

If Portugal was culturally an obscure country in eighteenth century Europe, its trade was, nevertheless, an asset which was not disregarded: "But the Great Glory of Portugal at present centres in her very extensive and immensely rich colony of Brasil in South America; from whence she has her vast Treasures of Gold and Diamonds, besides immense Quantities of excellent Sugars, Hides, Drugs, Tobacco, fine Red-Wood, & c...Every one knows that this noble Province has ever since (its discovery) proved an almost inexhaustible Fund of Riches to Portugal; and that all Parts of Europe, who have any Commerce with that Kingdom, do, in some measure, reap the Benefits" (13).

These benefits were largely profitable for the English merchants who established themselves in Portugal, mainly in Lisbon and Porto, representing, from the mid-seventeenth century to the second half of the eighteenth century, by far the most important foreign community resident in Portugal. As part of the privileges granted by the treaty of 1654, the English merchants had the right to use an English judge and benefited from other judicial exemptions. Their Chamber of Commerce, founded in the late sixteenth century, known as the British Factory, represented a British island in Portuguese territory (14). They had their own by-laws, a cemetery, a hospital and a chapel. Their involvement in the Portuguese trade was so extensive that the British, at some point, largely controlled the shipping to and from the Portuguese colonies. The implementation of the Methuen commercial treaty was also not satisfactory to the Portuguese balance of trade. The import of textile goods to Portugal was always more significant than the Portuguese wine exports. This fact was responsible for the majority of the profits of the British merchants: "According to the official English figures England achieved a surplus in her visible trade with Portugal in every year between 1700 and 1760" (15). But the "invisible trades", namely the vast capital generated by the credit given to textile merchants in Portugal, also benefited the British. As a result of this situation, Portugal saw the bullion coming from Brazil being used as a means to balance its permanent deficit with Britain and other European countries. A significant amount of Portuguese currency was circulating in Great Britain: the Portuguese gold coins with King D.João V's effigy (ruled between 1707-1750 - born in 1689) were better known in London than the British coins portraying King George III (b. 1738 – d. 1820) (16). The British Factory was, therefore, in Lord Tyrawly's own words: "a great body of His Majesty's subjects, rich, opulent, and every day improving their fortunes and enlarging their dealings" (17).

Portuguese and British economic and commercial relations up until the mid-eighteenth century is very indicative of the way Portugal dealt with its colonial trade in general. There was always an inability to use it as a means to generate profit (18). Throughout this period, Portugal's economic destiny was very much entangled in and conditioned by the commercial treaties with England. Politically and economically, Portugal survived as a peripheral state in the British world strategy as the British demands of supremacy reinforced the Portuguese structural incapacity in setting up an economic system able to retain and expand its colonial riches.

## 1.2 - Society and culture: the Baroque period.[3]

Following a general European attitude, Spanish and French accounts of Portugal and the Portuguese are generally of a negative nature reflecting, nevertheless, different purposes. Despite being looked at by the Europeans in a similar way, some Spanish authors, given the ancient political animosity between the two Kingdoms, were not particularly interested in looking at Portugal through an objective analysis (1). The late eighteenth century French accounts of Portugal and Spain were usually unfavourable and extremely critical. They had mainly a propagandistic intent as they tried to portray the Iberians as politically and socially underdeveloped.

However, the British and other Protestants were the most critical of the observers. Their accounts of Portugal express, most of all, the fundamental differences separating, at the time, the two cultural and religious worlds. The Portuguese are often described as idle and superstitious and the country "more pleasant than profitable" (2). Portugal is viewed as an exotic and obscure country and Lisbon is often pictured as an odd combination of sumptuousness and abject poverty. A miserable crowd (even the soldiers were beggars!) animated a chaotic, dangerous and filthy city embellished by numerous churches, convents and the new palaces built with the recent riches coming from Brazil. Religion ruled a country in all of its aspects: the Church had a prominent political and social role and structured the fundamental values of the Portuguese mentality. For the practical and puritan minds of the British travellers, superstition was a sign of a retrograde mentality and the constant religious manifestations a severe obstacle to an industrious use of the country's labour energies (3).

Despite the caricatured character of most of these accounts, they picture a scenario that was, in general, not very far from the truth. From the fifteenth and early sixteenth century society engaged in a pioneer worldwide economic enterprise, Portugal had evolved into a reality very much conditioned and restricted by the Counter Reformation movement and by an absolutist monarchy performing within the framework established by the former cultural and religious options. Portuguese society lived according to a mixture of values, beliefs and uses that combined Muslim and Catholic influences. The result of more than two centuries of overseas expeditions marked, also, the Portuguese scene: Lisbon was a cosmopolitan city populated by foreign merchants and sailors and African slaves (used as domestic servants). Wild animals and slaves were used in royal ceremonies as fundamental elements of baroque display and the new merchandise coming from the overseas possessions, including silk, precious woods, sugar and spices, and later diamonds and gold, created new demands and altered tastes and traditions. A repressive and all-powerful Church together with an absolutist Monarchy ruled the country and shaped the Portuguese mentality, whilst the Empire

[3] Notes p. 122

brought wealth to a de-structured economy and other cultural and artistic references to a traditional and conservative society.

Portugal was, therefore, a kingdom living between Europe and the rest of the newly discovered world. Lisbon, as its capital city and by far the most populated and largest urban centre of the country, was the site where all these influences converged. Portugal's geographical situation, which was largely responsible for its key role in the European trade network, simultaneously contributed to its cultural isolation from Europe.

For its multiple nature, Portuguese society seemed a distant and exotic example in Europe. Nevertheless, the Portuguese were never as isolated from Europe as Europe seemed to be distanced from Portugal (4). After the success of the fifteenth century maritime expeditions along the African coast, Portugal reached the rich and active eastern trade. Portuguese merchants went from India, to China and Japan. This enterprise rendered the Portuguese Crown extremely wealthy in the sixteenth century and Lisbon became an international centre not only of a commercial network but also of a cultural and artistic interchange:

"At court Dom Manuel was to define a pattern of patronage that depended on artistic contacts overseas. It was a policy that was cosmopolitan in aim and direction, and one that would long be maintained at the Portuguese court, although with varying degrees of continuity. And it was the genesis for much that followed. Under Dom Manuel in the early sixteenth century and again two centuries later under Dom João V (...) Portugal enjoyed fabulous prosperity (...). The two reigns are often compared for their ideals and displays of imperial splendour (...). The riches of the Indies and Brazil made possible these golden eras for the arts, both presided over by monarchs of vision, men born with dreams of grandeur " (5).

In fact, Portugal throughout the eighteenth century underwent a process of transformation, which enabled the country to be part of the European cultural, artistic and scientific movement even if this fact was not widely recognized by their European counterparts. From the second half of the seventeenth century, a fringe of educated people, aware of the changes taking place all over Europe, tried to minimize the growing cultural and economic gap between Portugal and the most developed European countries: "The eighteenth century was for the educated classes of Portugal, more than it was for those of Italy, France, and England, a period of crisis and change" (6). At the dawn of the eighteenth century, the Brazilian gold gave to these efforts the much-needed financial support.

The Earls of Ericeira's actions towards the opening of Portugal to European influence were not solely of an economic nature (The Earls of Ericeira had an important role in this process up until the sovereignty of D.João V in the early

eighteenth century). After the mercantilist project of the 3rd Earl, as Prime Minister to King D.Pedro II, his son, D. Francisco Xavier de Menezes (b.1673 - d.1743) promoted a cultural association, which was founded in 1696, gathering the first group of individuals receptive to the novel Cartesian ideas spreading in Europe. This association or academy, known as "The Erudite and Discreet Conferences" ("Conferências Discretas e Eruditas") assembled military engineers, mathematicians, theologians and the Earl himself. In these Conferences, subjects such as method, natural philosophy, modern logic and the progress of mankind were discussed in an obvious challenge to the Aristotelian Scholastic philosophy, which prevailed at the time in the Portuguese educational system (7).

An awareness of the Portuguese isolation within Europe and the need to open Portugal to improvement and modernization can be found in several late seventeenth century institutional documents. There is the example of the capital city council's minutes in which town planning strategies often state the call for improvement following other European cities' experiences (8). The way these arguments were used unquestionably reveals a deeply rooted attitude: they express an awareness of the need to be part of a cultural and scientific European ensemble. In fact, the long period of Spanish rule and the censorial actions of the Inquisition did not prevent the echo of the new philosophical and scientific ideas and achievements from reaching Portugal. As was happening all over Europe, the new trend of thought strengthened in Portugal the sense of a European cultural and social identity.

This tendency was reinforced in the early eighteenth century with the sovereignty of D.João V (1707-1750). The Joanine period is often pictured by foreign contemporary accounts as a time of profuse spending, chaotic and inactive government and profound social inequalities. An absolutist monarch, suddenly enriched by the Brazilian diamonds and gold, allegedly ruled a kingdom and an empire according to the demands of a decadent social order. The powerful leadership of an extremely rich Church gave to this picture an added conservative value. Marcus Cheke, based on several early eighteenth century foreign accounts of Portugal, states: "The splendour and wealth enjoyed by the Church were all the more astounding because the common people were obviously in abject poverty. A tenth of the Lisbon population were homeless, and scores of beggars lay all day at the church doors or whined for alms outside the convents. The tortuous and precipitous alleys of the city were littered with accumulated filth and rubbish" (9).

The contrast between Portugal and the most enterprising European countries of the time was, undeniably, very evident. Nevertheless, these accounts are, most of all, revealing of different cultural and, often, religious attitudes and therefore cannot be regarded as objective statements. If they sharply point out the dissimilarities they forget or ignore the resemblance(s). As already stated, Portugal tried after the Restoration to be an integral part of Europe.

Within the boundaries imposed by social and religious restrictions, there was an evident effort to open the kingdom to improvement.

D.João V resumed his father's [D.Pedro II] projects of social improvement and, with the help of the Brazilian assets, exposed Portugal to European influence: "The fact remains that the young man who found himself suddenly on the throne of Portugal turned out to be the patron *par excellence* of science and the arts, a man of sensivity and good taste who, by opening windows upon the wider world of Europe, helped to make possible the subtle changes of the Portuguese eighteenth century" (10).

D.João V's cultural and artistic policy was a fundamental element of an overall strategy for the strengthening of Portugal's position in the European context. In fact, the Portuguese Crown was aware of the risks of falling behind the rest of Europe. As António José Saraiva sharply points out: "It was imperative for the honour and the safety of the Kingdom to develop certain branches of the luxury and war industries; its military power lacked specialised technicians in engineering, chemicals and ballistics; the problem of the final delimitation of the Brazilian frontiers required a great cartographic accuracy and the traditional delimitation of the longitude had been seriously questioned by the most competent European cartographers; the educational deficiencies of the Portuguese doctors had became notorious" (11).

According to his biographers and researchers, D.João V used the example of two European realities: Louis XIV's political and cultural project and a combination of the artistic proposals of the Roman and Central European baroque taste (12). His actions reveal both a national and an international intent. On the one hand, he engaged in the search for an adequate and prestigious profile for his absolutist sovereignty and, on the other, he was involved in the structuring of a cultural and artistic identity able to project Portugal away from Spanish influence according to a fashion dating from the period of the Restoration (1640). With regard to the latter issue, the Portuguese actions were not always straightforward as the Spanish example was often followed. In fact, the Portuguese policy in this matter was rather pragmatic as Spanish experiences and options were closely observed and used when they proved to be advantageous.

Overall Joanine cultural actions followed two chief objectives: the forming of national expertise and access, by study and collection, to the most recent cultural, scientific and artistic achievements. Thus, a number of scholars and scientists were sent to European academies: "(...) King John, following the practice of his predecessors in the sixteenth century, began again to subsidize the education of young Portuguese in the academies and universities of Europe. The policy was maintained until the end of the *ancien régime* (...)" (13). Literary and historical academies were founded in the kingdom and a Portuguese art academy was established in Rome; foreign

artists and experts were engaged in a series of works; royal libraries and artistic and scientific collections were organized; music and drama, namely the opera, were given a significant stimulus in this period (14).

All of the fine arts, as well as the decorative arts (for the development of which the Crown created some important manufactures, for example, the silk and glass factories), were given an important boost at the beginning of the eighteenth century. Within the framework of the baroque philosophical and aesthetic attitude, the king used foreign contributions and national potential to improve and promote Portuguese art in order to dignify its image in the most prominent European states. Obviously, the favourable financial situation of the Crown helped to provide to this enterprise a successful outcome.

If Portuguese painters and sculptors did not achieve an international profile in this period, overall artistic production in the country, especially in the early eighteenth century, was sufficiently important and wide-ranging to allow some European impact. In fact, especially in the capital city, there was a visible change of scenery, which was acknowledged by the various foreign visitors. Coming from the top, this trend was followed by the aristocracy reflecting Portuguese opulence at the time.

Portuguese architecture after the Restoration was profoundly marked by the financial and political circumstances of the time. It combined military architecture solutions with traditional formulas that envisaged order, proportion and functionality rather than exuberance and monumentality: "Plain Portuguese architecture corresponds to an experimental attitude among designers who were nourished on Renaissance theory and yet were able to disregard its prescriptions in the quest for useful and inexpensive building. Its earliest expressions emerged in association with military architecture and in connection with religious reform movements opposed to the laxity of monastic life. Rationality and austerity were the guidelines from the beginning, persisting even through the financially extravagant reigns of King Sebastian and the Cardinal King (late sixteenth century), in an architecture prefiguring the Spanish *estilo desornamentado*, but lacking the immense American wealth of Spain" (15). According to the author, this style, or taste, developed from the mid-sixteenth century, resisted Spanish rule and its monumental architectural solutions, and prevailed in Portugal up until the beginning of the eighteenth century when the gold and diamonds from Brazil and the artistic program of the new king D.João V favoured the set-up of Roman and Central Europe baroque taste.

The plain architectural repertoire was, therefore, the result of a free and pragmatic use of the Renaissance theoretical designs, according to specific national demands. This free interpretation and implementation of the Renaissance architectural precepts was connected, according to the same author, to traditional spatial and ornamental formulas which were developed

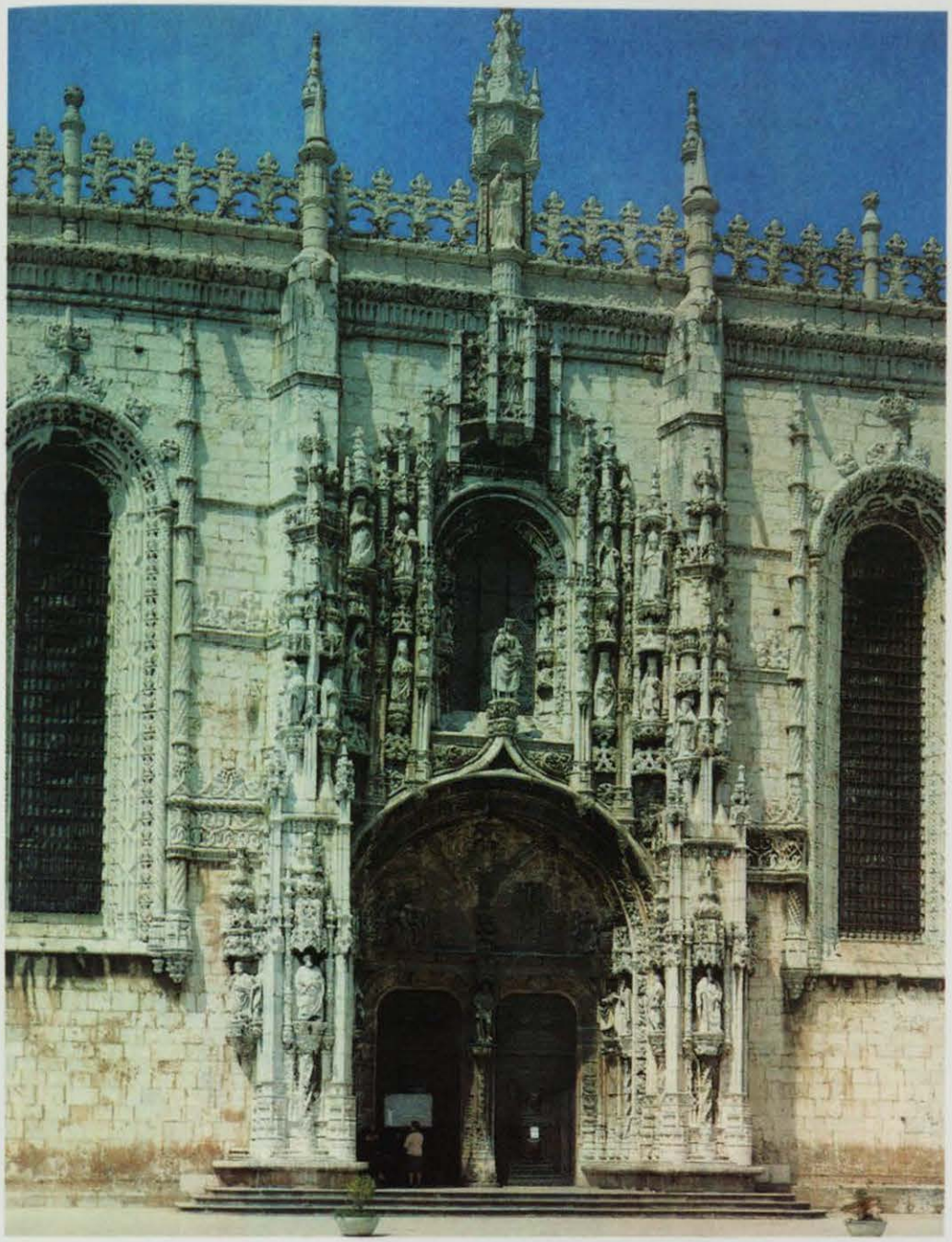
in times of national affirmation: "These differentiating traits were not learned from Italian treatises. They are related to a large complex of Portuguese military, nautical, and commercial traditions, all drawing upon other European achievements for the integration of Lusitanian interests in the post medieval world"(16).

Between the exuberant *manuelino* style implemented in a favourable economic context (resulting from the early sixteenth century African and Indian trade) and the European baroque program of the Joanine period, Portugal developed, thus, a functional and sober architecture, extremely influenced by military architectural designs, which overall reveal the adequacy of this type of formal and spatial solutions to the Portuguese political and cultural context **(Illustrations 10, 11 and 12)**. The decorative arts had a privileged role in this process: the use of tiles and gilded carved-work as an interior decoration expedient, especially in the religious buildings, gave a distinct imprint to the baroque architectural scene in Portugal.

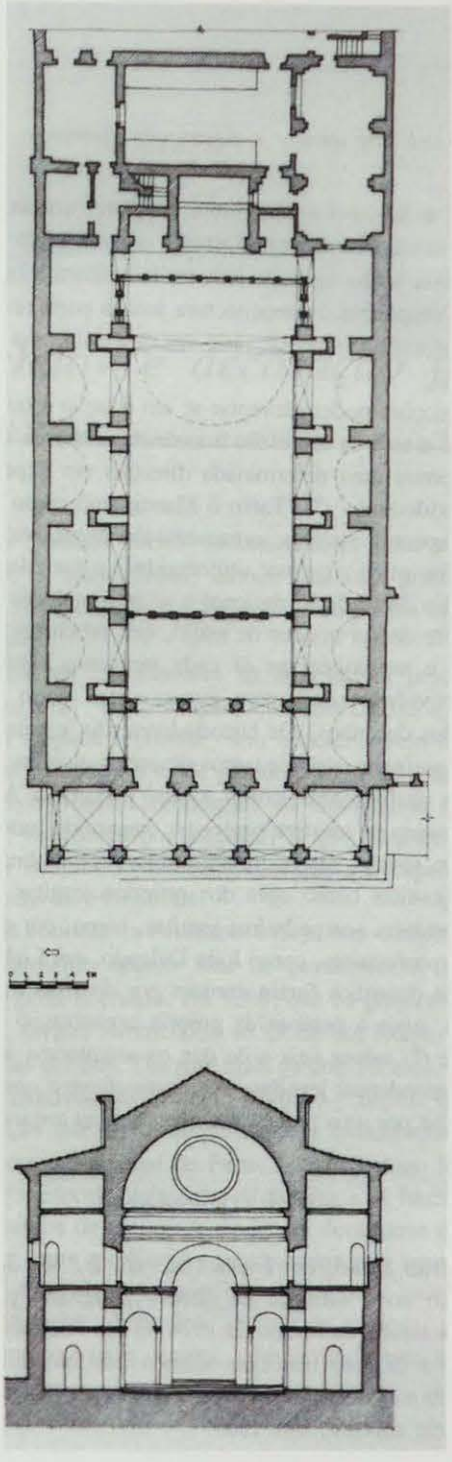
The military engineering pragmatic character complied very well with a traditional political and military sensitive situation to which we must add the constraints of the Portuguese frail demographic resources. Therefore, in Portugal the military architecture, later military engineering was dominant for traditional and remote circumstances but had, nonetheless, an innovative character which, unquestionably, followed European trends. Throughout Europe, the seventeenth century was a privileged time for this architectural approach not only by political circumstances but also for social and economic reasons. As already stated in the previous chapter, the military engineering allowed a rational and utilitarian urban and architectural layout, which supported the demands of the new social and economic order.

The Joanine period marked a new era for Portuguese baroque architecture. The political project of the new king envisaged a position in Europe which opened the artistic field to an array of foreign influences. The innovatory aspect of Joanine artistic activity was the establishment of a strategy foreseeing the renovation and enrichment of the Portuguese artistic panorama. Despite the obvious attraction of Roman baroque proposals, the Joanine period reflects, on the whole, once more a combination of European influences and traditional formal and decorative solutions.

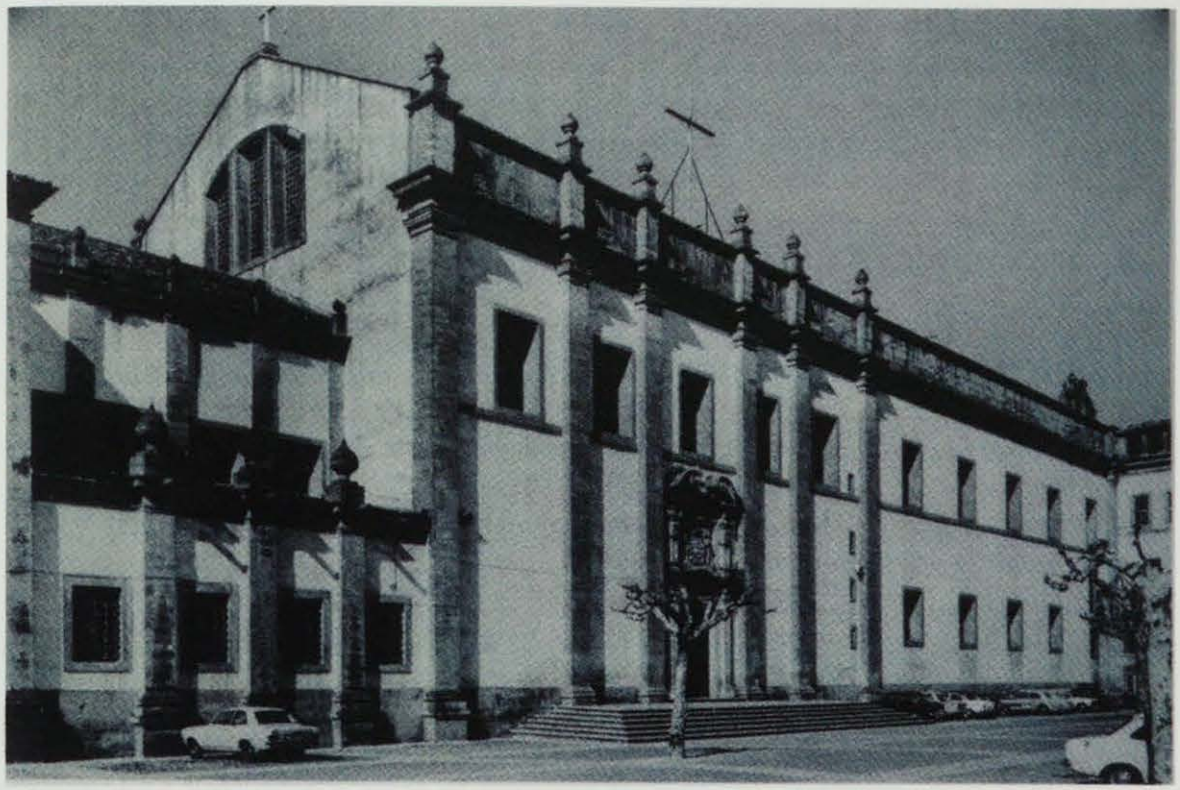
D. João V used the skills and taste of a few European architects, for example, the Italians Filippo Juvarra (b.1678 – d.1736) and António Canevari (b.1681-d.1750) and employed a German goldsmith, who designed most of the chief urban works of the period: known as João Frederico Ludovice (b.1673 – d.1752) in Portugal. This architect was responsible for the major Joanine works, namely the new cathedral, the *Patriarcal*, which was destroyed by the earthquake of 1755 and the palace and convent of Mafra on the outskirts of Lisbon (17) (**Illustrations 13, 14 and 15**). Mafra is usually considered as the



10. **Jerónimos Monastery, Lisbon** – Church (south façade), early 16$^{th}$century. Architects: **Diogo Boytaca** and **João de Castilho**. According to Pedro Dias, who has extensively studied the subject, the Manueline is a decorative style applied on a gothic structure, using naturalist elements, which are already present in the final gothic (Dias, Pedro, "O Manuelino" *História da Arte em Portugal- 0 Manuelino*. Vol. 5. Lisboa: Publicações Alfa, 1986. Paulo Pereira ("Do Modo Gótico ao Manuelino (sécs XV-XVI)" *História da Arte Portuguesa*. Vol. II. Lisboa: Círculo de Leitores, 1995, p. 13) argues, quoting the work of José Custódio Vieira da Silva (*O Tardo-Gótico em Portugal: a arquitectura no Alentejo*. Lisboa: Livros Horizonte, 1989), that the " 'Manueline style' is nothing more than a strictly regionalist and Portuguese expression of the late gothic".



11. **Espírito Santo Church** (Évora, Portugal) – plan, 1566-74. Architect: **Manuel Pires**. Published in Kubler, George, *Portuguese Plain Architecture – Between Spices and Diamonds* Middletown, Connecticut: Wesleyan University Press, 1972. Kubler considers that this Jesuitic Church, although reflecting the influence of the Spanish *desornamentado* style, reveals already the *estilo chão* design: "At the Espírito Santo church, this rhetoric is spoken with what is already a distinct and definitive Portuguese accent. The rules may be Hispanic, but the language itself is Lusitanian", p. 59.
**DGEMN (Lisbon)**.

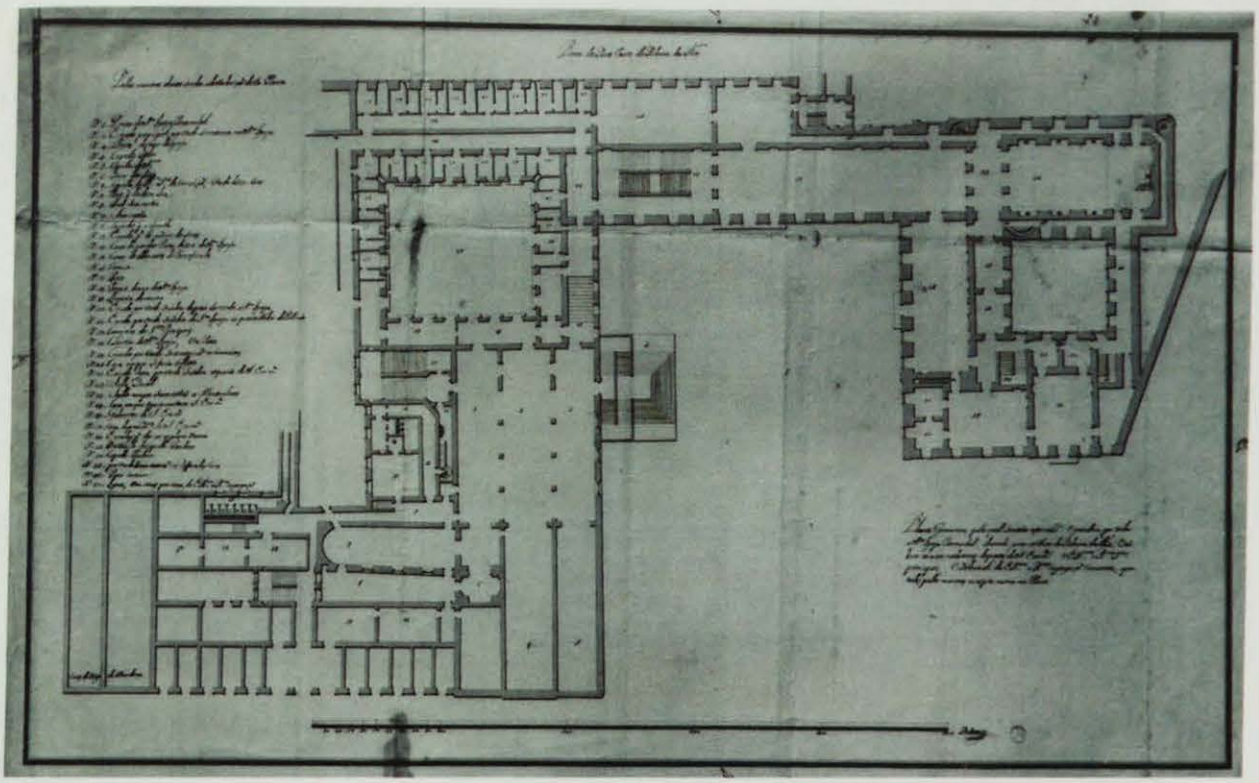


**12. Santa Clara-a-Nova Church (Évora, Portugal)** – north façade, begun in **1649**. Attributed to **Frei João Turriano**. Published in Kubler, George, *op. cit.*

most significant work of the Joanine period mainly for its defining characteristics which do not have an echo in the Portuguese architectural tradition. Mafra shows a formal vocabulary complying with Roman baroque decorative proposals and an overall spatial composition deriving from the baroque of Central Europe (18). Canevari worked in the refurbishment of the royal Juvarra Palace on the *Terreiro do Paço* (he arrived in Lisbon in 1727) and drew plans for a new royal palace and cathedral on the western area of Lisbon (1719), which were never carried out (**Illustration 16)**.

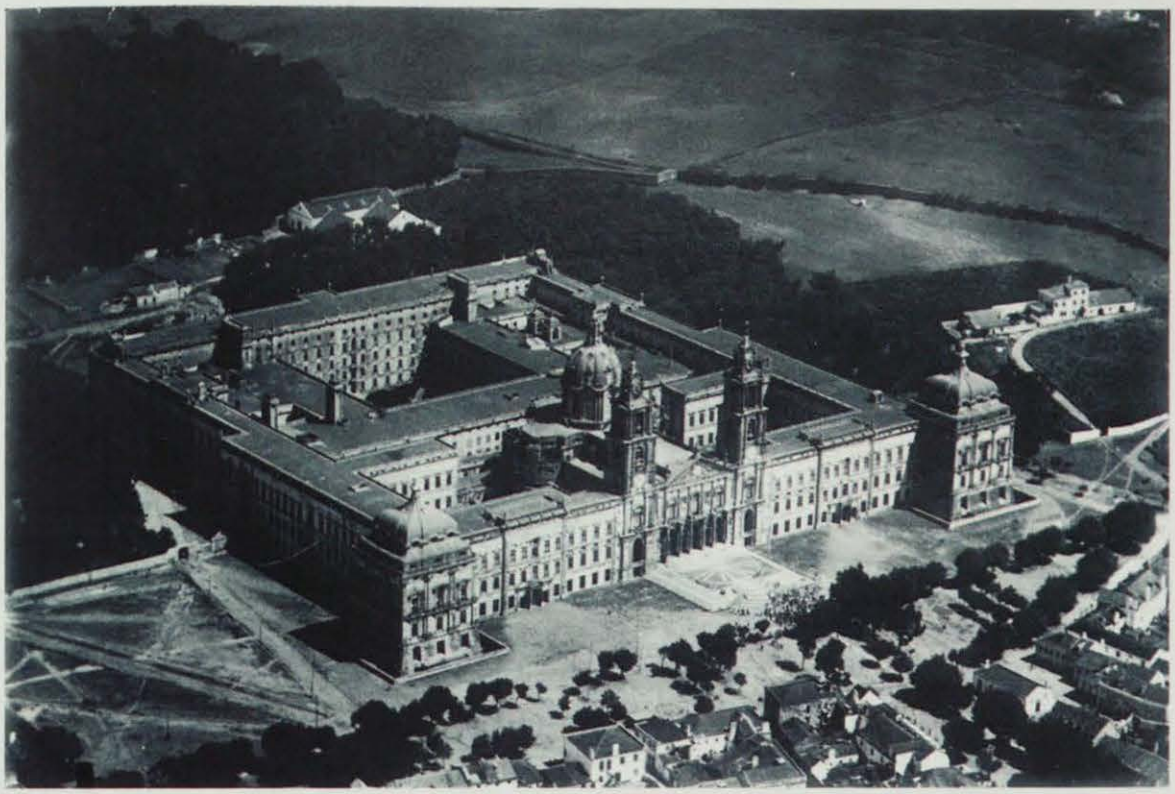
Ephemeral architecture had a visible importance in Portugal given the cultural and religious traits of early modern Portuguese society. It responded not only to the demands of the absolutist power but also to the needs of a most religious and devoted population. These festive architectural displays had a primary role in the relationship between the established political and religious powers and their subjects. They staged the most defining features of the Portuguese baroque society: royal marriages, entries, corteges and ceremonies and religious processions and celebrations. To this group we can add the festive display: the bullfight. All these events represented a point of cohesion between the population and the ruling social structure. In a country where the baroque architectural taste only had an exuberant decorative expression in the North, the ephemeral architecture was allowed to perform in all its liveliness. Baroque society in Portugal complied very well with the symbolic and aesthetic precepts of this type of formal exhibit. Apart from staging the new political order, it favoured the synthesis between the traditional and the novel in all of the aspects of the political, social, cultural and religious Portuguese scenario. It reflected the synthesis between the new face of power and the surviving medieval structures; between the traditional medieval religious festivities and the new dramatised ceremonies of faith and between the two levels of reality put in confrontation with the Discoveries. As happened throughout most of baroque Europe, the ephemeral architecture in Portugal represented, thus, a privileged artistic expression of the society's internal functioning.

The Crown used the services of a few enlightened personalities who acquired a broader understanding of the European reality through their personal experiences: "He [the King D. João V] was served well by his protégés, the *estrangeirados* or cosmopolites that he was attracted to, Portuguese who had experienced life abroad and been informed of it. He was also well served by the Portuguese expatriates, voluntary exiles for the most part who lived in Rome, Paris, and London, who could function as the King's eyes and ears in the progressive countries of their residence"(19). With some exceptions, most of these *estrangeirados* ("foreignised") managed to maintain a cordial relationship with Portugal despite their obvious critical attitude with regard to the Inquisition. They reveal in their writings a profound knowledge of the evils afflicting the Portuguese society but never express a radical attitude towards the *ancien-régime* system. Through the *estrangeirados*' contribution, the Crown managed to establish some links with the new European ideas and this was strengthened by the influence of the French and Austro-Hungarian



13. **New Patriarchal, Lisbon** (begun **1740**; architect: **J. F. Ludovice)** – Inscription: "Planta Geometrica pella qual se mostra a formalidade e grandeza, que tinha a St.ª Igreja Patriarchal, abrazada junto aos Passos da Ribeira da Naos; e tão bem as accomodacoens do quarto de S. Emm.ª e Ecc.mos e Ecc. Mos S.res principais, e Tribunal da Ex.ma Congregação camararia, apontados pellos numeros escriptos na mesma Planta. Parte dos Reaes Passos da Ribeira das Naos") "Geometric Plan which shows the formality and greatness of the Patriarchal Church, burned near the *Ribeira das Naus* Palace and also the lodgings of His Eminence and His Excellency and Their Principal Excellencies, and Court of the Most Excellent and Reverent Council Congregation, named by the numbers written on the mentioned Plan. Part of the Royal Palace of the *Ribeira das Naus*". Etching (china ink). Second half of the eighteenth century. Dimensions: 430x605 mm. **BN (Lisbon) D.13 r.**

**14. Church of the Convent of Mafra** (sacred in **1730**; architect: **J.F. Ludovice). FCG – BA (Lisbon) -** Robert Chester Smith Collection.



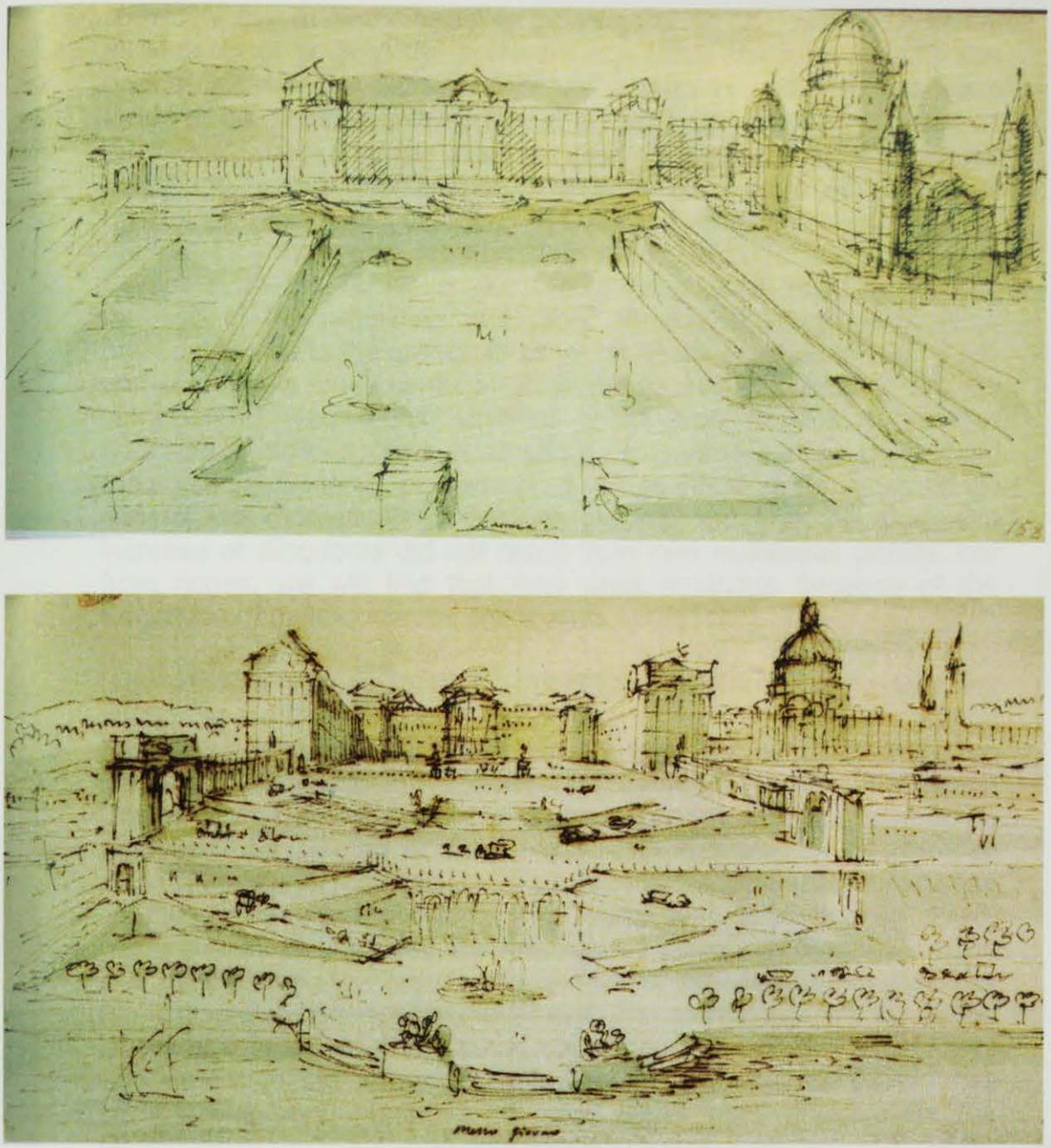
**15. Palace and Convent of Mafra** (**1717-1770**; architect: **J.F. Ludovice**) – birds eye view. **FCG - BA (Lisbon) -** Robert Chester Smith Collection.

princesses who married the Portuguese kings after the Restoration, Maria Sophia Isabel de Neuburg (b. 1666 – d. 1699), 2nd wife of D. Pedro II and Maria Anne of Austria (b. 1683 – d.1754), wife of D. João V.

Some of D. João V's *protégés* had also an important role after his death as they influenced to a great extent the vast plan of reforms of the second half of the eighteenth century:

- D.Luís da Cunha (b.1703 – d.1775) was a politician and a diplomat who lived abroad and who maintained an amiable contact with the Portuguese Crown. His writings express the convictions of a man aware of other political, social and economic European realities. In 1696 he was appointed an envoy extraordinary to the Court of England where he remained until 1712. Subsequently, he was sent to Utrecht, Cambrai and finally to France. His residence in both England and Holland significantly influenced his ideas. The enterprising and pragmatic character of the political and economic systems of these two countries made him aware of Portugal's limitations in these matters. His most renowned work *Testamento Político* (*Political Will*), began in 1747, which he dedicated to the new king D.José (1750 – 1777, b. 1714), D.João V's son, is considered to be the basis of the Pombaline political project. In a clear and systematized way he specifies the steps to be taken and the aims to be achieved: "If someone would accuse me of embracing in this matter Maquiavel's maxims, when he says that the monarchic government would be the most perfect of them all if the prince would neither have favourites nor confessor, I confess my guilt with repentance"(20). Following this statement, he carries on indicating how to tackle the main problems of the Portuguese society according to the principle that the prince should rule as a *pater familias*;

- Ribeiro Sanches (b.1699 – d.1783), a prominent scientist, was another of the Portuguese *estrangeirados* whose work and stimulus were fundamental for the opening of the Portuguese mentality to other influences. He was the physician of the Russian Empress Anna Ivanovna and lived in Paris where he died. Amidst his extensive writings, which considered a large number of subjects, we can find the following enlightened perception of the Portuguese society: "In Portugal everyone who was not born Noble, or is not an Ecclesiastic, wants to become a member of these two respectable Bodies, where convenience, honour, distinction, and profit have their seat; the farmer, the labourer, the craftsman work day and night to produce a Cleric, an Abbot, a Knight of the Habit of Christ; a widow and three or four daughters weave day and night to make a Friar out of a son, because of the honour that will come to the family, and because, if he becomes a Preacher or Provincial, he will endow it with honour and abundance" (21). This reality depicts, on the whole, an *ancien-régime* society. Nevertheless, Portugal was a particular example of the survival of the traditional social structure and mentality in a changing economic environment. As happened with other *estrangeirados*, Ribeiro Sanches



16. **Sketch of the New Palace and Patriarchal, Lisbon (1719)**. Architect: **Filippo Juvarra**. Published in Rossa, Walter, *Além da Baixa - Indícios de Planeamento Urbano na Lisboa Setecentista*. Lisboa: IPPAR, 1998.
**Museo Civico di Torino, Inv. 1859/DS, vol. I, Foglio 97, Disegno 157.**

considers first of all the negative influence of an all-powerful church in all aspects of society: the dominant scholastic teaching system was one of his targets. Ribeiro Sanches' concerns and interests even included town planning strategies: in his work *Consideraçoins sobre os Terremotos, com a noticia dos mais consideraveis, de que faz mençaô a Historia, e dos ultimos que se sintiraô na Europa desde o I de Novembro 1755* (*Considerations about the Earthquakes, with news of the most considerable mentioned in History, and of the last felt in Europe since the 1st November 1755*), published in Paris in 1756, in the eve of the rebuilding of Lisbon, Ribeiro Sanches gives some practical advice to the architects as to the healthiest sites to build a city and some of its fundamental public buildings. His wide-ranging writings comprehend also a fundamental contribution for the subject of education: *Cartas sobre a educação da mocidade* (*Letters concerning the youth's education*), published in 1759. In this work he states: "If we consult the monuments of History, we will find that the glory and increase of Kingdoms did not result from their numerous armies, nor from riches; we will find that they were illustrious because of the Education of their Monarchs and their subjects" (22).

- Luís António Verney (b.1713 – d.1792) had French ancestors. He studied at the University of Évora and soon departed to Italy to pursue his studies in theology and law. Having fixed his residence there, he carried out some modest diplomatic appointments for the Portuguese Crown. From Italy, he wrote a fundamental work *Verdadeiro Método de Estudar* (*True Method of Teaching*), which was as Manuel Cardozo puts it: "the single most influential study by a Europeanized Portuguese of the Enlightenment" (23). This work, first published in 1746, comprehensively criticized the educational system in Portugal, which was controlled by the Jesuits and, therefore, was deeply influenced by the scholastic philosophical movement. The author explains in sixteen letters how to establish a method able to comply with the latest ideas with regard to the subject. The impact of this work on Portuguese society was very important: its main ideas were decisive for the structuring of the Pombaline educational reforms.

Other names can and should be added to the list, for example Castro Sarmento (b.1691 – d.1761), resident in England and extremely influenced by the British ideas on Empiricism, who was consulted by King D.João V for advice in the reform of the medical studies; or Dom Rafael Bluteau (b.1638 – d.1734), member of the Royal Academy of Portuguese History by appointment of King D.João V or yet Francisco Xavier de Oliveira (b.1702 – d.1783), known as the Chevalier de Oliveira, the only *estrangeirado* to be condemned by the Inquisition (as he was living abroad, he escaped the execution but his effigy was burned in a public ceremony). According to his biographer António Gonçalves Rodrigues, he was persecuted for political rather than religious beliefs (24).

Early eighteenth century Portugal was, therefore, opened to European influences. In fact, the king's policy with regard to this matter shows a broad-minded attitude that some authors consider an early manifestation of enlightened ideas (25). It was, nevertheless, kept within the boundaries of a baroque mentality and under the vigilant and censorial eye of the Church. *Ancien régime* structures were never shaken: Portugal evolved in a changing European scenario retaining the novelties without using however their revolutionary potential.

## 1.3- The Pombaline project[4]

This situation led, in the mid-eighteenth century, to the structuring of a social and economic project envisaging the modernisation of the Portuguese society following enlightened precepts. This wide-ranging venture was defined and implemented by a prime minister who used, nevertheless, an autocratic and extremely repressive political system. Sebastião José de Carvalho e Melo, who received the titles of Count of Oeiras (1759) and Marquis of Pombal (1769), prime minister to King D.José I, set about the enormous task of rendering Portugal a credible competitor in the European economic scenario. To this end, he used the instrumental tools of enlightened absolutism or despotism in a radical manner, establishing a very repressive political environment. Kenneth Maxwell defines this project as the *pombaline paradox*: "Pombal, wanted to civilize the nation and at the same time to enslave it. He wanted to spread the light of philosophical sciences and at the same time elevate the royal power of despotism" (1). However, Pombal never clearly distanced himself from the essence of enlightened absolutism. To some extent, he is the true enlightened despot as he used a very autocratic political system to impose a project, which he believed would be extremely beneficial for Portuguese society.

To reinforce this character, Pombal assigned for the most prominent administrative posts some of his relatives. His brother, *Monsenhor* Paulo de Carvalho e Mendonça, was the *Inquisidor Mor* (Head of the Inquisition) and controlled Lisbon's city council; João de Almada e Melo, a cousin, led the *Junta das Obras Públicas* (Public Works Department) in Porto and Francisco Xavier de Mendonça Furtado, another of his brothers, was governor of the province of Grão-Pará in Brazil, between 1751 and 1758.

Pombal's actions and reforms were daring and innovative. Yet, they cannot be regarded as the result of a single man's initiative: "The so called Pombaline age is not a fracture, it is rather a continuity. Pombal belongs to his age, to the State he served, to the social classes from which he depended, to the historical environment that raised and guided him" (2).

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[4] Notes p. 124

As we have already seen, the Portuguese Crown's policy since the Restoration was to keep up with developments in Europe. Some enlightened individuals, as D.Luís da Cunha and Ribeiro Sanches, were aware of the difficulties in accomplishing this task for social, cultural and religious matters. They knew that Portugal also lacked a political structure able to set up a clear and extensive programme of reforms. Pombal had the merit to understand this issue. He searched for innovation and improvement within the boundaries of the system. As one of the *estrangeirados*, Pombal wanted to reform what was too ineffective to be sustained in order to keep the traditional system alive in a time of change: "The extinction of the aristocracy, as the ruling social group, was not one of the objectives of the Marquis of Pombal. In fact, we can say that what he wanted was to adapt it to the new survival conditions, by means of a policy which had already inspired the Earls of Ericeira to set up several measures and initiatives for industrial development and cultural reform throughout the sovereignty of D.Pedro II and D.João V" (3). However, some of Pombal's actions altered irreversibly the Portuguese scenario making possible the slow but steady evolution to a new political and social order.

Pombal was himself an *estrangeirado* as the first steps in his political career were carried out as a diplomat. In London and in Vienna, the future Marquis of Pombal became brutally aware of the fact that Portugal was well behind the most influential European countries. From 1738 to 1743, he lived in London as an envoy extraordinary to the British Crown (4). During his stay in the country he had the opportunity of closely observing British society and began to delineate a plan to modernize the Portuguese economy: "The most interesting matter, which can be the subject of a minister's relationships when residing in London, I consider to be, since I entered this court, the investigation of the causes that brought the Portuguese commerce to such decadence as Your Majesty found it at the beginning of your governance, while the British and other nations' commerce had an excessive augment..." (5). His second post as a diplomat took him to Vienna where he stayed from 1745 to 1749 and met his second wife, Maria Eleanor Ernestine Eva Wolfgang Josepha, countess of Daun. In Vienna, Pombal had also the chance to witness the conception of a vast program of economic reforms.

From London and Vienna he wrote a series of letters to some of his friends in Portugal, including Marco António de Azevedo Coutinho who was his relative (an older cousin) and Minister of the Foreign Affairs. These letters are extremely revealing of the structuring of Pombal's ideas with regard to the political and economic strategies to be implemented in Portugal. In London, he became conscious of British policy concerning Portuguese economic affairs. The unjust treatment of the Portuguese interests and Britain's increasing pre-eminence in the European scene were responsible for the basis of his economic policy. His impatience and frustration towards this situation can often be traced in his letters: "The way the affairs are going here forces, whoever loves reason, and cannot, with patience, see the injustices, to spend several centuries in a few years" (6).

Upon his return to Portugal, after his second diplomatic assignment, the future Marquis was not well received by King D. João V. Only after the king's death, Carvalho e Melo was able to obtain a prominent place in Portuguese state affairs mainly by the intercession of the king's widow, Queen Maria Anne of Austria, who was related to his wife. To Carvalho e Melo is given, thus, the post of Secretary of State of the new king D.José.

Despite the envy and opposition of the old aristocracy, as Carvalho e Melo was merely the son of a country squire, he began at this moment a political career, which was responsible for the main changes that took place in eighteenth century Portugal. The Marquis of Pombal acted as an enlightened despot in the name of a king who had neither the inclination nor the ability to rule. To this end, he used the knowledge and experience of the *estrangeirados* and his personal familiarity with some of the new European ideas to delineate and direct an extensive reform plan envisaging ultimately the modernisation of the Portuguese society.

In order to achieve his intentions, Carvalho e Melo judged it as vital to strike at the heart of the Portuguese conservative society: the old aristocracy and the Jesuits. Clearly separating secular from religious affairs and in an attempt to reinforce the despotic character of his government, the future Marquis maintained the Inquisition court but as a State's tribunal. A supposed conspiracy against the king gave the excuse for the first and most tremendous blow suffered by the old aristocracy: the execution of the most prominent members of a prestigious family, the Távoras, along with some influential aristocrats (1759). As a result of this event, the Jesuits, who were accused of being accomplices, were persecuted and ultimately expelled from Portugal. The main reasons for their expulsion were, however, their active and predominant role in Brazil, which was a restraint to Pombal's plans for the colonization of this territory, and their control of the Portuguese educational system (7). With the old aristocracy kept out of the political sphere, the Jesuits away from their predominant cultural and educational role and the Inquisition acting as a State department (1768), Pombal organized an autocratic political machine directed to the execution of his comprehensive program of reforms.

In economic strategy, Pombal developed a project foreseeing the protection and implementation of the Portuguese manufacturing and trade system. His project combined a number of influential elements including the late seventeenth century mercantilist projects implemented in the country, the British and Austrian systems, which he had personally examined, and the main political principles of enlightened despotism. Pombal decided to start from first principles, as José-Augusto França asserts, and therefore he ignored the emergent physiocratic economic ideas. His main objective was to reverse the deficit of the Portuguese trade balance in order to obtain for Portugal some sort of economic autonomy. The British interests and extensive benefits in the Brazilian trade and the negative impact of the

Methuen Treaty on the Portuguese trade balance were his main concerns. Following these assumptions, Pombal tried to optimise the kingdom's and the Empire's resources in order to structure a manufacturing and trade system complying with the main mercantilist ideas. He founded a number of monopolistic companies, co-ordinated by a state institution, which controlled the Brazilian and Asian trades, agricultural activities and Portuguese wine production (8).

Brazil was a privileged element in this process. During his political assignment, Pombal reinforced and structured the extensive colonial occupation of this South-America possession using both the State's apparatus and private initiatives. Within the boundaries of its autocratic governance and following a Portuguese colonial policy, the State's administration was meticulously extended to this colony as a means to ensure the Crown's sovereignty over the new territories: "The investment of power of the Crown agents, its functionaries, is one of the essential characteristics of the Portuguese colonial administration" (9). Pombaline policy with regard to the colonisation of Brazil reinforced not only the main traits of the Portuguese colonial procedures but most of all, responded to fundamental enlightened precepts. A clear and precise program was implemented envisaging an effective centralized control of the whole territory following Pombal's chief political and economic ideas of improvement and modernisation: "In this way, reform assumed a role within a power struggle, which defines it as a precise political strategy. That strategy, in turn, was part of a greater ideological context, the great 'Reform of the World', preached by the enlightened ideals, which advocated the passage of Humanity from the era of darkness and ignorance to the light of knowledge" (10).

The pragmatic attitude of the British middle class caused a mixture of resentment and admiration in the Portuguese Prime Minister: "The English are not murderous; on the contrary they detest killings and the effusion of blood. If, by this principle, the foreigners do not have here to fear for their lives, it is almost impossible for them to resist the fears for their property. The English presume, by an innate anticipation that they were born to be the masters of the world's assets; that it is necessary to be British, as they say, in order to be skilled and able to possess riches. Consequently, they were usurped of those that are the property of the other nations; that, when they vex a foreigner, to extort him of his riches, or to divert the profit that he should have, it is not a robbery that they are committing, but a claim, as it is returning to them what is their due" (11).

If this excerpt is more critical than admiring, it reflects, nevertheless, the recognition that the British had an unusual attitude, alien to the *ancien régime* codes and values. Pombal recognised the beneficial effect of the practical and enterprising character of the British social and economic system. Comparing the Spanish and the English trade, he considers: "... it is a generally accepted axiom that the subject who finds a treasure or a diamond

valued at ten thousand *cruzados*, does not provide to the State a service worth comparing to the sending of a shipment of goods of the same value. The reason is that the profit of the former is kept to himself; the profit of the latter circulates within an infinite number of hands which it feeds and fattens, exercises the sailors, uses the ships and animates all the other subjects with the example and the hunger for which comes from commerce" (12).

It is interesting to note that the Portuguese Prime Minister often commends the modernity of the British system without, however, considering its overall revolutionary character. Pombal recognizes the need to change the conceptual approach to the new enterprising economic activities. The future Marquis understood that more than implementing a series of reforms it was vital to change mentalities. Nevertheless, his actions never attempted a fundamental change of the *ancien régime* social structure. Pombal promoted and supported a group of merchants without however stimulating their social autonomy. Ultimately, he made the State and not specific individuals responsible for the task of implementing an innovative economic policy. Pombal's actions in this field are more in contact with the social reality of countries like France, especially to his promotion of the emergent *noblesse de robe*, than with the examples of Great Britain or the Netherlands. Nevertheless, Pombal's policy opened the social structure to some mobility, which would favour, at the turn of the century, the forming of a middle class able to defy the *ancien régime* social structure.

The decline of the Brazilian trade after 1760 was an important blow for both Portuguese and British interests. This event was, nevertheless, more serious for the former than for the latter. The British merchants were backed by a political, social and economic system that did not existed in Portugal. Although Pombal's actions had an unquestionable impact on the eighteenth century Portuguese society, as a project they did not accomplish their main objectives: Portugal maintained its peripheral economic position in Europe, prolonging its dependence on Britain. The adverse economic conditions of the period and the lack of an extensive and structured social and economic program conspired to bring about its failure. Pombal's project revealed an acute awareness of the main problems but failed as a strategy. In order to achieve his purposes, it was fundamental to implement a national market, which could not occur within the boundaries of the Portuguese social structure. Probably José-Augusto França is not very far from the truth when he states: "Always forced to run before danger and forced to find circumstantial relief, without having the possibility of conceiving a program, Pombal is an empirical and pragmatic statesman. (...) Pombal is a victim of the Nation's weaknesses and, therefore, of the need to start everything from scratch. He could not by himself and in his lifetime defeat and neutralize the corruptive force of this imperative. Thus, he held on to the outdated principles by which he had been educated and which seemed to be to him the only ones able to regenerate the country. He forgot essential measures such as the building of roads in a country where the two major cities, at 350 km apart, were distanced by a one week journey" (13).

From all his efforts to modernize the Portuguese society, probably one of the most significant was the reform of the educational system, especially the reform of the university. This task was accomplished after the expulsion of the Jesuits from Portugal (1759). The Jesuit control of the teaching system in Portugal, imposing a traditional and outdated Aristotelian system, essentially at a university level, was largely criticised in the works of the *estrangeirados*. Since the early eighteenth century, the Crown had been trying to restructure the educational system by imposing some restrictions on Jesuit autonomy in this matter: D.João V supported the initiative of other religious orders, as in the case of the Oratorians which seemed more open to improvement (14). In general, early eighteenth century enlightened Portuguese society resisted the restraints inflicted by the Inquisition and the Scholastic philosophy and was able to keep in touch and to divulge, to some extent, the latest ideas and fashions. The most prominent noble families kept rich and extensive libraries and some Portuguese university teachers manage to pass on to their students the most up to date cultural and scientific information (15).

Pombal's educational reforms legitimised the progressive character of the early eighteenth century efforts. To this end, he used the *estrangeirados* contribution to this subject, especially the works of Luis António Verney (16), which influenced significantly the Reform of the University and Ribeiro Sanches' writings regarding the education of the nobility (17).

Pombal set up an extensive program of educational reforms: from primary studies to University level. In 1761, he founded the *Colégio dos Nobres* (*Nobles' College*), reforming secondary studies and in 1772 he implemented the reformed statutes of the University of Coimbra. Quoting, once more, Manuel Cardozo: "Portugal, so far behind the rest of the Continent on the educational front, moved drastically forward" (18).

Together with political and economic rivalries, the philosophical and scientific European movement developed a strategy of emulation and interchange of information. Pombal, as an enlightened mind, never disregarded the beneficial effect of "imitating", as he puts it, foreign ideas and innovations. Therefore, he continued the early eighteenth century policy of bringing to Portugal foreign experts in the most diverse fields and promoting the sending of Portuguese students to European academies. The main purpose, obviously, was to develop in the country a group of educated people able to conform to an autonomous teaching structure and to a national cultural, scientific and artistic movement. Spanish, Italian and French cultural and philosophical movements had an essential impact on Portuguese society. Portugal was mainly sensible to the countries whose social, cultural and religious options were similar to theirs and the example of the cultural interchange between Portugal and Spain is revealing of this situation. Their shared political context in the early seventeenth century led to a reinforcement of some cultural and artistic links; with the Restoration this tendency was reversed in an attempt to preserve Portugal's cultural

autonomy; however, Spain because of its proximity and cultural similarity remained an important reference point for Portugal (19).

Nevertheless, the national experience represented a constant and essential source of inspiration and working material. In every field of action, Portugal always tried to forge a strategy able to tackle its specific problems and demands. In the conception of this strategy the political pressures and demographic debilities of Portugal were acknowledged. From the concerted use of these two series of elements, national and European, eighteenth century Portugal structured its policy with regard to modernisation.

Within the limits of the empire, there was also a fertile interchange of ideas and information. Brazilian students often came to the mainland to pursue their academic studies (20). Their influence on Portuguese philosophical and scientific thought deserves some serious analysis. The fact that they came from a society less rigid and more open to external influences gave to them an enlightened perspective on Portugal's debilities (21). Brazilian students were also sent to other European universities and academies where they had the opportunity to make contact with the latest cultural, artistic and scientific trends and developments.

As already mentioned, the second half of the eighteenth century was not as positive financially for Portugal and the Portuguese Crown. The earthquake of 1755, which destroyed all Lisbon's city centre, the decline of the Brazilian trade and the unfavourable European economic situation all contributed to a financial recession in Portugal. This fact had a significant impact on artistic production in the country and, to some extent, oriented tastes and fashions. Nevertheless, it does not on the whole explain the change of attitude with regard to this subject. The Pombaline period reflected, most of all, a change of mentality, which incorporated a familiarity with the new enlightened ideas circulating in Europe. Nonetheless, this new attitude was not solely a result of the European trend of thought; it reflected also the survival of some remote concepts and practices.

José-Augusto França pictures the Pombaline period as a dreary but innovative time. According to this author, the emergent group of traders and State servants and the depressed financial situation shaped a poor cultural and artistic scene which, nonetheless, was permeable to some of the new ideas and fashions coming from Europe, especially, France. The access of the new social group to the few existing cultural institutions, for example the newly founded literary Academy of the Arcades, was the most relevant sign and the most evident result of the Pombaline policies. The outlook was not cheerful. Cultural and artistic events, from literature to music, were scarce and irrelevant; autocratic and ascetic governance and a strong financial restraint reinforced the overall lack of enthusiasm and creativity. Some of these assertions are backed by foreign accounts of Portuguese social life

(22). Nevertheless, it is important to note that they reflect, overall, a critical and surprised reaction to a reality distanced from the most exuberant and glittering European courts.

Throughout the seventeenth and eighteenth centuries, with the exception of the first half of the eighteenth century at the time of the influx of Brazilian gold and diamonds, Portuguese society was very much conditioned by political and military restraints and some financial hardship. The sixteenth century had been, as already mentioned, an exception. It represented for Portugal a very important period of cultural and artistic production, which was fuelled, in the early fifteen hundreds, by the exuberant Manueline aesthetic proposals and in the mid-century, by the more sober Italian Renaissance formal solutions. Throughout this century, Portugal was also a centre of artistic interchange between the East and Europe (23). However, the late sixteenth century was marked by a more austere cultural and artistic attitude: the Counter Reformation and the political and military circumstances of the country favoured this trend, which emphasised a more national and pragmatic approach to artistic issues. The ancient political animosity between Portugal and Spain, to which overseas expansion added an extra pressure, forged a strong and centralized political power and moulded, to some extent, a particular social, cultural and artistic scenario. The late sixteenth century was characterised by the return to a fierce military policy that ended in 1578. This date marks the end of the North African expeditions with the defeat of the Portuguese in *Álcacer Quibir*, where the Portuguese king D. Sebastião (1568 – 1578, b. 1554) was killed together with a vast number of noblemen. This event opened the way to a political crisis that led to the loss of dynastic autonomy to Spain. When the Restoration took place in 1640, the Portuguese Crown faced the task of repairing this situation and directed its policy to make Portugal once again prominent in European political, economic and cultural context. Military issues significantly influenced this period and led to a particular social attitude. This situation shaped the Portuguese approach to art and architecture: the temperance of costumes in Restoration Portugal was pictured in the formal rigour and sobriety of the *estilo-chão* ("plain style"), reinvented from the late sixteenth century first proposals. From the late seventeenth century, some political and military stability and the newly discovered Brazilian gold changed this scenario. These goods altered the overall artistic Portuguese context mainly by extensively financing and supporting tastes and demands, which were not completely alien to the Portuguese reality.

Pombal, to some extent, re-used the seventeenth century attitude towards these issues and adapted it to his own objectives and ideas. In fact, Pombal did not minimize art and its role in society. Instead, he subscribed to its promotion and protection the main ideas presiding over his social and economic project: the rendering of Portugal a safe and self-sustained place in the European context. The rococo taste marked the artistic production of the Crown and the aristocracy whereas the State promoted architectural and town planning programs according to plain and functional structural solutions,

which announced already neoclassical precepts. With regard to the decorative arts, Pombal set up a glass factory with British capital and founded "The Royal College of the National Manufactures" (*Real Colégio das Manufacturas Nacionais*) in the old Silk Factory which was intended to teach a stream of arts and crafts. Although, this new school was not completely successful it managed to develop two important courses: drawing and plaster design (24). Some of these enterprises outlived the Pombaline period, as in the case of the glass industry, which was, up until recently, one of the most successful in the country. Pragmatism oriented Pombal's actions and, therefore, he paid a special attention to every field of action that could be beneficial to this enterprise. Thus, architecture and town planning were treated as privileged fields of action. The development of Portuguese military engineering is crucial for the understanding of Pombal's views with regard to the city and the role of town planning. In Brazil and in the kingdom, Pombal oversaw a process of urban planning that was carefully delineated following his political and economic project of reforms. The reconstruction of Lisbon after the Earthquake of 1755 was, evidently, by its magnitude and its significance the most expressive example of Pombal's urban policy. To this subject we will return in the next chapter.

## 1.4 – The turn of the century: regression or progress?[5]

The old aristocracy, gathered around the princess D. Maria (b. 1734 – d. 1816), the eldest of D.José I's four daughters, never forgot the persecution suffered during Pombal's assignment as prime minister. Thus, after the death of D.José (1777), Pombal was forced to retire from his political career and from Lisbon (he went to live in Pombal, a small town some 25 miles from the capital city where he died in 1782). D.Maria I ruled up until 1792, when a mental breakdown, precipitated by the news of the French Revolution, caused her retirement. D.João, later king D.João VI (b. 1767 – d. 1826), replaced his mother from that date on, being officially appointed as king regent from 1799.

Pombal's political disgrace did not reverse the overall process of modernization and opening to Europe. Recent studies have shown that there was no fundamental change of intent in any of the cultural and scientific developments. In fact, the late eighteenth century in Portugal expressed, more than any period in that century, an acknowledgement and divulging of Enlightenment ideas in every aspect of society. This process was, however, always conditioned by a specific political, cultural and religious context which harboured two different visions of the world and society: "One of the most evident aspects of D.João VI's regency period (...) is the retaking of the Pombaline reform measures and the emergence of tensions between Enlightenment signs and not less significant attitudes of cultural conservatism with regard to ideas considered offensive to religion and the State" (1).

[5] Notes p. 127

Throughout this period, inherent *ancien régime* tensions and imbalances were intensified. The European political and social developments and the strengthening of the role and influence of an emerging middle class contributed decisively to this situation. Overall, the Pombaline project of reforms was carried out, once again, in an attempt to modernize within the boundaries of the system. To some extent, this process was even extended in an attempt to safeguard Portugal's place in Europe. The newly founded Lisbon Academy of Sciences (1779) gathered the vanguard of the literary and scientific community replacing in this role the decadent University of Coimbra. Pina Manique, head of the Police Department of D.Maria I's government established for the first time a Fine Arts Academy in Portugal (1780/1785). Both institutions had a fundamental role in the promotion of the Portuguese cultural and scientific scenes not only in the country but also in a European context.

Following a fashion, which began with the Portuguese Discoveries, the colonial possessions were, once more, a privileged material for study and experiment. Brazil and the African possessions of Angola and Mozambique became a fundamental field of experience for Portuguese scientists. A number of scientific expeditions to these destinations, promoted and subsidized by the Crown, were carried out up until the end of the eighteenth century (2).

However, some of the most enterprising literary and scientific ventures were not carried through to completion. The fragility and decadence of the Portuguese social and political structure significantly conditioned the modernization process: for example, a much needed Portuguese Dictionary was never completed and the valuable works of the late eighteenth century expeditions were left untouched and, as such, became an easy target for foreign scientific interests (3).

The reconstruction of Lisbon was resumed after Pombal's retirement according to the approved plan, although revealing signs of a different aesthetic taste: the overall project was kept yet allowing some particular architectural freedom complying with a pre-romantic attitude: "The city was livened up by the wealth of the Pombaline bourgeoisie, freed from the centralized mercantilism and won over by the physiocratic *laisser passer*" (4).

A slow but steady process towards modernisation and a new social and political order was on its way. There was, in fact, more than a chronological distance from the early eighteenth century foreign accounts of Portuguese society: as the Baron of Chatelêt notes "...ignorance is no longer the appendange of all Portuguese noblemen" (5).

## 2. Urban planning in Lisbon before 1755

### 2.1- Lisbon's growth from the early sixteenth century[6]

Lisbon developed from its foundation up to the nineteenth century closely in connection with the river Tagus (*Tejo*). During the second half of the fifteenth century, when the expeditions overseas began to be the main enterprise of the Portuguese Crown, this union between the river/sea and the city was reinforced. Lisbon developed as an amphitheatre erected along the river, establishing itself on several hills, which are the most defining topographic feature of the location (**Illustration 17**). From the Muslim fortified core, the city expanded to the east, but principally to the west. This was clearly the main direction of the city's expansion up until the late eighteenth century.

Throughout the sixteenth century, Lisbon expanded very quickly: from 1551 to the beginning of the seventeenth century, thirteen new parishes were added to the urban area of the capital city. New occupations, directly related to the sea expeditions, developed rapidly: from the making of ships to the trading of goods coming from many parts of the world. Therefore, Lisbon became a major attraction to the countryside population as well as to foreign merchants (1).

The impact of the Discoveries enterprise on the capital city was, unquestionably, considerable. Lisbon began to suffer from the evils afflicting large urban centres at the time: overpopulation and intensive urbanisation. The Portuguese capital city acquired a cosmopolitan character and its city centre pictured the emergence of a strong urban environment. Some Portuguese contemporary descriptions of Lisbon, despite their over-enthusiastic character, provide rich information regarding the image of the city: "And if we stop speculating, and get to the facts, perhaps we will find it to be the largest in the world (if not in extent) at least in the number of neighbours, and in people, as we will not find in this City as many stables, backyards, as there are in many cities we are informed of; and having the latter usually one-storey houses, here the most part have three storeys, and four, and many five, and some six, being as well the streets very narrow" (2).

At the beginning of the seventeenth century, Lisbon was, thus, in the group of the most populated European cities. The extension of the city to the west and the confined layout of most of its streets prevented the further vertical growth of the buildings (**Illustration 18**). In fact, this account is confirmed by the Survey of Lisbon, carried out just after the earthquake of 1755, which states that the city buildings were for the most part of three storeys and only a few could reach six storeys. Lisbon's medieval character survived in the winding maze of the old areas of the city, which reflected also the Muslim legacy (3).

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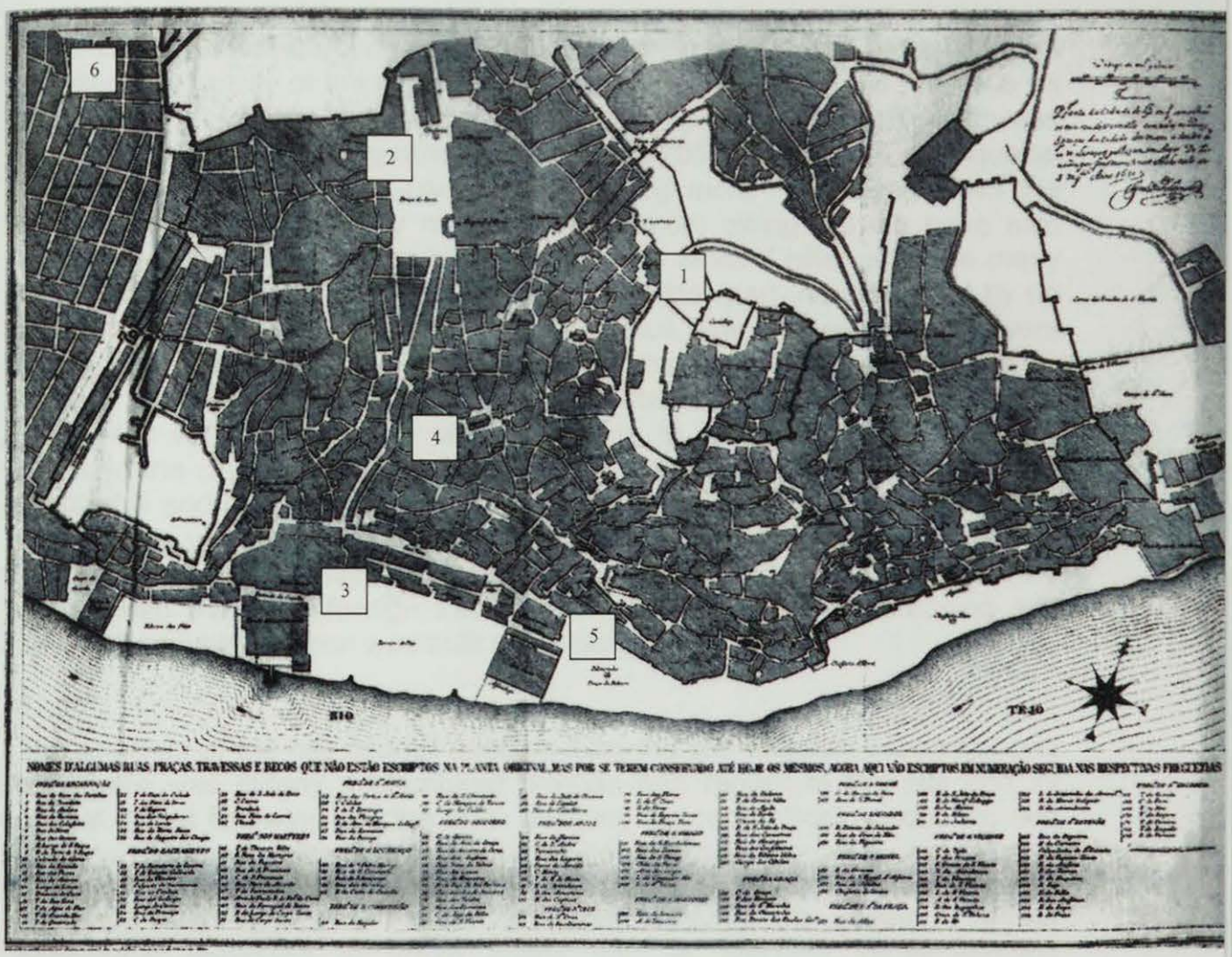
[6] Notes p. 128

17. **Lisbon in the second half of the sixteenth century.** From the engraving by **Georgius Braunius** "Olisipo, siva ut Pervetustae Lapidum Inscriptiones Habent, Ulysippo, vulgo Lisbona Florentissimum Portugalliae Emporium from *Civitates Orbis Terrarum*", (1572). View of Lisbon from the left bank of the river Tagus. Lisbon is pictured as an amphitheatre, developing in several hills, and descending to the river. From the Castle (second hill, from the right), the maze extends itself to the river. The large square, facing the river, is the *Terreiro do Paço*, named after the royal palace built by king D. Manuel I at the beginning of the 16th century (at the left hand side). Separating the main square from the beach area to the East (*Ribeira Velha* – market place), is the block of buildings of the Custom House. To the West of the Royal Palace, is the *Ribeira das Naus* (shipyard, surrounded to the North by the artisans' block of houses). To the North of the *Ribeira Velha*, it can be seen the Old Cathedral. The area between the *Terreiro do Paço* and the large square to the North, the *Rossio*, is the downtown, which was the commercial heart of the city. The large building on the right hand side of the *Rossio* is the *Todos os Santos* Hospital, the main hospital of Lisbon, destroyed by the 1755 earthquake. (See **Illustrations 18** and **20**).
Dim: 485x350mm. **MC (Lisbon).**




18. **Plan of Lisbon, dated 1650**. Plan drawn by the military engineer **João Nunes Tinoco**. Pictures pre-earthquake Lisbon before the city works of the late seventeenth century and early eighteenth century:
    1. **Castle Hill**
    2. ***Rossio***
    3. ***Terreiro do Paço*** **(Palace Courtyard)**
    4. **Downtown.**
    5. ***Ribeira Velha*** **(Old Riverside) Market**
    6. ***Bairro Alto*** **(Higher District).**

    Copy dated 1884.
    Published in Silva, Vieira da, *Plantas Topográficas de Lisboa*. Lisboa: Câmara Municipal de Lisboa, 1950.
    **IGP.**

The hilly topography of the location also contributed to the irregular layout of the streets.

From the late fifteenth century, as a means to improve urban safety and the architectural quality of the city, the use of masonry was enforced. There is an interesting Scottish account of the Portuguese capital city in 1745, which was published in the *Scots Magazine* in November 1755, just after the earthquake: "It is almost impossible to conceive any thing more magnificent than the appearance this stately city made at a distance; owing, as we have said before, as well to its situation on the declivity of several hills, as to the many grand edifices with which it abounded. The interior part, however, did by no means correspond with its external magnificence. The houses of Lisbon were mostly four, few of them five stories high, and built of stone. The narrowness, declivity, and irregularity of some of its streets, and the dirtiness of others, made it a very disagreeable place of abode to strangers" (4). The author refers to the city centre, which included the medieval neighbourhoods of the Castle hill and down town Lisbon. This latter area was the city centre, which suffered, as we shall see, an important number of enlargement works up until 1755. However, its layout was not significantly changed and to the enlightened minds of foreign travellers, remained extremely confusing and untidy. Pombaline Lisbon was built on its ruins.

The analysis of the city council minutes from the late fifteenth century shows that there was clearly a structured attitude with regard to the city and its spatial layout following precise town planning concepts. Socio-economic and military elements stimulated and conditioned urban growth and had a fundamental impact on the study and practice of architectural and urban planning. With regard to Lisbon, a recent study of the evolution of the conceptual approach to urban space and its practical implementation considers that: "Solidified through a vast number of experiences, the urban space at the end of the fifteenth century tends progressively to acquire an aesthetic value, which was regulated by a legislation aiming for a more rational urban structure" (5).

The development of town planning strategies was, thus, shaped by tradition, practice and new demands. Lisbon's urban growth up until the early modern period reflected the combined influence of Muslim and medieval urban procedures. At the end of the fifteenth century, the centralisation of the political power, which was fuelled by the economic interests behind the overseas expansion, created new urban demands.

After the success of the sea expedition to India in 1498, which opened the regular maritime route between Europe and the Orient and with the discovery of Brazil in 1500, the Portuguese king, D.Manuel I (1495 – 1521, b. 1469), decided to build a new palace near the river. The royal residence was, therefore, moved from the Castle Hill to the large square, just opposite the

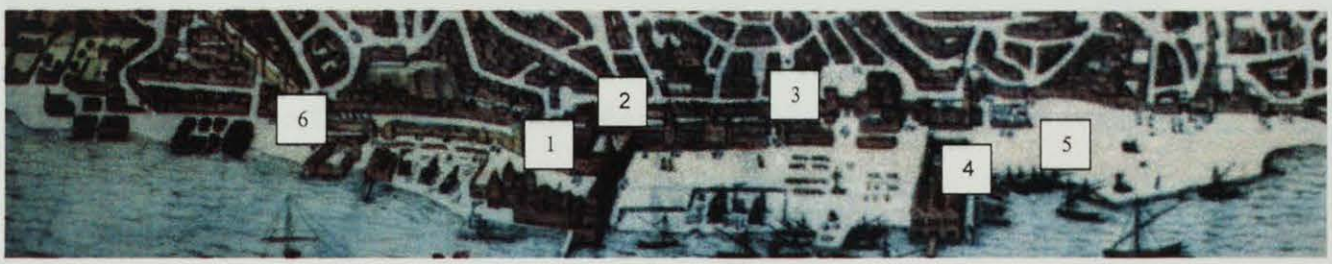
river, which was named *Terreiro do Paço* (Palace Courtyard) (**Illustrations 19 and 20**). This decision was of extreme importance for the future layout of Lisbon. D. Manuel's resolution to move its royal residence to the square near the river answered practical and symbolic demands. It placed strategically the political headquarters at the gateway to the sea, seat of all the maritime activities (**Illustrations 21a and 21b**). The city centre was positioned according to the Crown's major economic enterprise and it had, unquestionably, a significant symbolic meaning; with Lisbon as the capital city presiding over the Portuguese expansionist venture.

The building of the new royal palace on the riverbank, far from its medieval location on top of a hill, was a vital part of an extensive program of urban rearrangement of the capital city, which was carried out from 1498. This project was part of the new political and economic strategy of the Crown of which the expansionist project was, at the same time, an engine and a tool. The first stage of the program also included the refurbishment and the construction of a number of city council public buildings and urban infrastructures, such as fountains and quays, the enlargement of the busiest gates of the city and the improvement of the cleaning system. This vast program of works initiated a process of urban redefinition, establishing new spatial and architectural norms: "In Lisbon, in the first years of the sovereignty of king D.Manuel, a vast number of architectural and urban actions were initiated with deep implications for the building of a new structure and image for the city" (6). This urbanisation program, which also contemplated financial support measures, was accompanied by a series of reforms aiming for the consolidation of the kingdom as a politically centralised entity (7).

As already mentioned, the urbanisation of the area alongside the river, the *Ribeira*, was an essential part of the whole program of works. The second program of works was directed at the construction of a number of public buildings linked to the overseas enterprise in the area extending from the *Terreiro do Paço* to the East, the old *Ribeira* (**Illustration 20**). This project combined a representative and functional character. In fact, it shaped the new city centre according to demands of power and public convenience. As such, this part of the city was planned as its structuring piece, a role that it performed up until 1755: "If the first plan focused itself mainly in the urban renovation and restructuring of the city centre, the second one focused in the creation of an imperial city image, with the construction of great buildings directed to the support of the Empire's commerce and administration" (8).

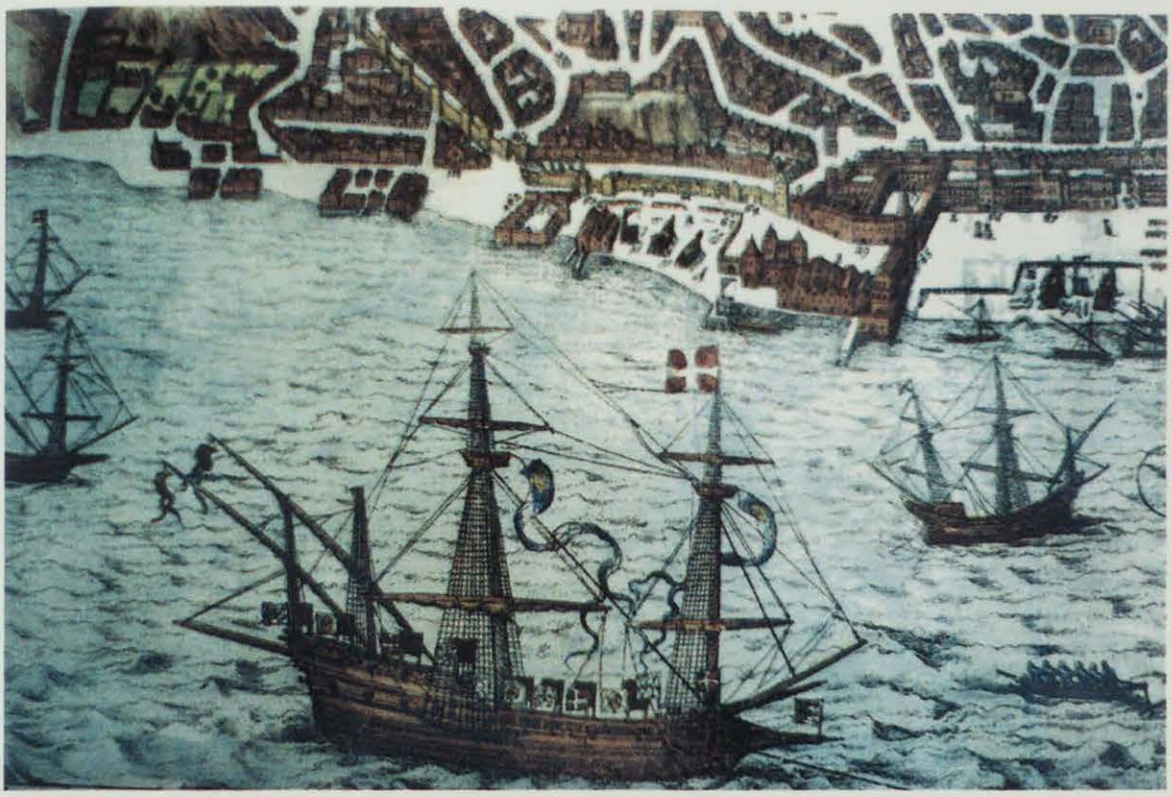
As part of these two programs of works, other town planning actions were carried out in Lisbon aiming at the extension of the city to the west. According to Hélder Carita, the projecting and building of *Vila Nova de Andrade*, later known as *Bairro Alto* (Higher District) dates from this period. The *Bairro Alto* was the first area of the city to be urbanised following a globally structured plan (**Illustration 22**). It was developed just west of the medieval walls and followed the urbanisation of the neighbouring area of *Cata que farás*, near the


19. **View of the *Terreiro do Paço*, of the *Torre de Belém* at the west end of the city, and of the Tagus's mouth with its fortifications, Lisbon.** "Embouchure de la Rivière du Tage. N. De Fer/Geographe de Sa Majesté Catholique/à Paris/chez l'auteur dans l'Isle du Palais sur/le Quay de l'orloge à la Sphère Royale/1715". Coloured engraving. Dims: 500x210mm.

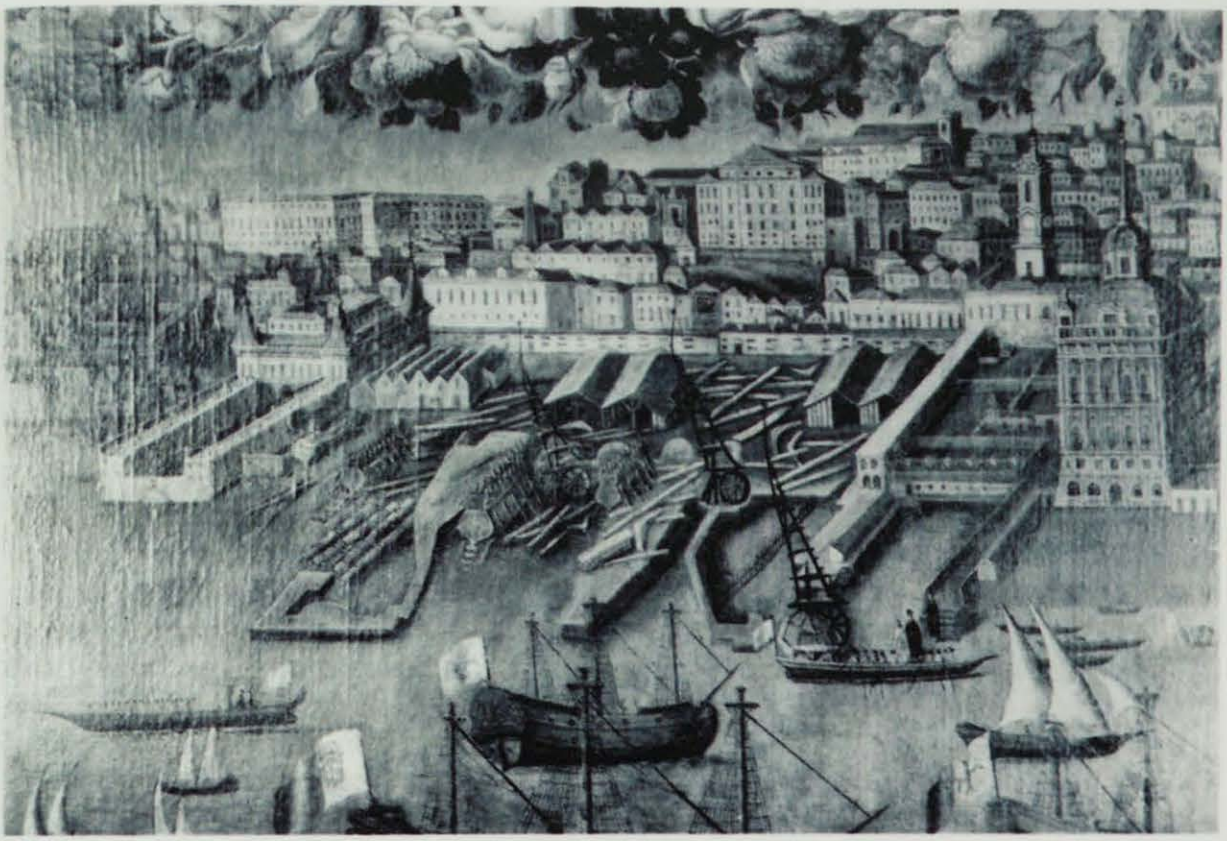



20. Detail of illustration **17**. **The *Terreiro do Paço*** in the 16th century, **Lisbon.** This architectural ensemble was projected as a whole by D.Manuel I, aiming to give structure to the political and commercial heart of the city, it included apart from the Royal Palace, the *Casa da Índia* (India House), the *Casa de Ceuta* (*Ceuta* House), the Shambles, the *Terreiro do Trigo* (Crops Warehouse) and the Customs House: see Carita, Hélder, *Lisboa Manuelina e a Formação de Modelos Urbanísticos da Época Moderna (1495-1521)*. Lisboa: Livros Horizonte, 1999.

1. **The Royal Palace**
2. **The India House**
3. **The Shambles**
4. **The *Terreiro do Trigo* (Crops Warehouse) and the Customs House.**
5. **The *Ribeira Velha* Market**
6. **The *Ribeira das Naus* (Shipyard)**



**21a.** Detail of illustration **17**. **The *Ribeira das Naus*** (Shipyard).



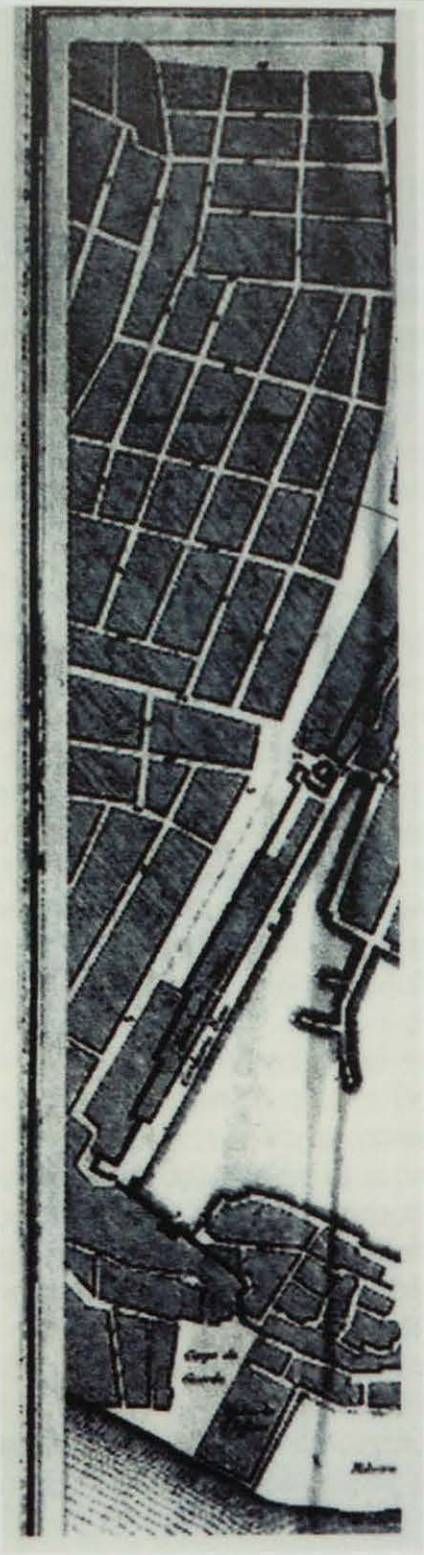
**21b. The *Ribeira das Naus*.** Detail. "Departure of S. Francisco Xavier to the Orient".
**Oil on canvas. MNAA (Lisbon).**

river (9). The building of *Bairro Alto* benefited from the vicinity of a new Jesuit church and convent built circa 1553. This project had the full and even active support of the Crown (King D. Sebastião, in the late sixteenth century, showed a personal interest in it and ventured to sketch some planning ideas) and the city council. Finalized during the rule of the Spanish Crown (early seventeenth century), the *Bairro Alto*, occupied by palaces and convents represents an essential landmark in the town planning history of the city. It provided Lisbon with the first town planning experience combining spatial elements (in this situation the block) with architectural modules.

Thus, the Manueline period conceived and put into practice, for the first time, an urban policy directed to the city as a whole. The city, as both a social and spatial entity, acquired a symbolic character, which needed to be addressed globally. In other words, the experience and the knowledge gathered by the city council and the Crown in dealing with daily urban issues were dimensioned according to a defined and emergent idea of the city. This new attitude responded to national practical demands but it was in tune with contemporary European town planning proposals and developments. To Lisbon was given indisputably the status of the capital city of a kingdom and a vast Empire and its urban quality had to be compatible with its strategic political and economic position. History and tradition played a very important role in this process: "D.Manuel is said to have ordered Bishop Paulo Jovio to write a *perfect history of Lisbon*, which was never accomplished. This is the first reference found with regard to this subject. It may signify the beginning of the understanding of the city as capital city. In fact, it was not just the kingdom which was being pictured in the royal chronicles, Lisbon was acquiring a new significance and projection, which were expressed in the great architectural creations of the early fifteen hundreds, and as such deserved a special treatment" (10).

In this context, the Manueline period was responsible for the first town planning enterprises aiming for a controlled and rational spatial and architectural urban development. The definition of some normalised but flexible architectural models and spatial urban components structured Lisbon's growth throughout the following two centuries. In fact, there was a standardisation of the façades according to the use of durable building materials and to the definition of formal uniform precepts. Also, urban space began to be structured according to some specific operative elements: from the street-alley model there was a clear evolution to the rectangular block (11).

Moreover, from this period dates the first efforts to control and define the relationship between the different intervening agents operating on the urban tissue: the Crown, the city council and the private landowners.



**22.** Detail of illustration **18**. **The *Bairro Alto* (Higher District), 16th century**. The first district of Lisbon to be planned according to a regular layout. It is located to the West of the *Stª Catarina* Gates (*Chiado* area), which are part of the *Cerca Fernandina* (city walls built by King D. Fernando between 1373/75).

This conceptual and practical approach was neither broken by the Spanish rule (1580-1640) nor by the Restoration period (1640 – 1668). Lisbon's urban development was thereafter regulated by a specific and evolving legislation, which presupposed the maturing of precise town planning concepts. There was a close relationship between this process and specific national requirements, using the most contemporary scientific tools available. In other words, Lisbon's urban evolution was shaped by political centralization and the new economic demands fuelled by the expansionist enterprise and, to this end, the knowledge acquired by the development of the nautical sciences and mathematics was extensively used.

The Manueline period clearly represents the beginning of a transitional stage. The late medieval regular plans, which spread throughout Europe and in Portugal had a particular expression as part of the colonisation of the kingdom, were still shaping the ordering of the territory in the kingdom and in the Empire throughout the fifteenth century (12). However, new urban ideas were in development structuring a different conceptual approach to the urban space. Throughout the sixteenth century, the Renaissance theoretical contribution was gradually incorporated in the process of urban creation. Also, the new role of the city, as part of an urban hierarchy within each national state, developed new spatial and architectural programs. Portuguese town planning thought tried always to keep up with the latest European developments, both in the kingdom and in the extensive colonial possessions: "The modernization of civil life which occurs from the sixteenth century also corresponds to the centralization of royal power and to local administrative reform. This modernization process had its urban expression in the reform of the urban public spaces and in the reconstruction of some civil and religious institutional buildings. (...) We ought to understand D.Manuel I's concerns with regard to the ordering of urban space within this context. They were also not unfamiliar with the diffusion in Portugal of the new Renaissance ideas regarding architecture and the city" (13). An array of political and cultural elements forged a specific Portuguese approach to town planning issues. However, the fundamental conceptual precepts, which shaped the idea of the city in early modern Europe, were obviously part of the Portuguese urban discourse.

From the mid-sixteenth century, the analysis of Lisbon's council minutes reveal the maturing of some fundamental town planning concepts: embellishment and public convenience. The latter concept seems to have evolved from the idea of good neighbouring to a more comprehensive approach. These two ideas structured urban intervention in Lisbon up to the mid-eighteenth century, giving place then to a more elaborate town planning conceptual program. Embellishment meant urban quality, which could only be achieved by urban regularity; public convenience meant urban functionality, which could only be obtained by a global urban outlook. These town planning precepts were not exclusive to the Portuguese process; they were part of a wider town planning trend that saw itself as such (14). The exchange of information supported the theoretical expression of the town planning

movement of the time. The practical demands of each society, acting as pieces of the same jigsaw, gave to it a flexible but comparable understanding.

Lisbon's town planning history is particularly rich reflecting its urban importance both in a national and international context. A comparative study of the urban planning procedures and legislation in Lisbon and in other main European cities reveals that, from an early period, the Portuguese Crown and the Lisbon city council had a clear awareness of the need to control and regulate urbanisation (15). This attitude evolved hand in hand with architectural and urban expertise: it stimulated the definition of architectural and spatial solutions and benefited from the latter's experiences. As we will see in the next chapter, military engineering played an important role in this process.

Between 1580 and 1640, the kingdoms of Portugal and Spain were united and Lisbon lost some of its prominence - the Court was no longer there, Madrid had taken away many of Lisbon's attributes as a capital city. Nevertheless, the Spanish Crown together with Lisbon's municipality continued and extended a program of maintenance of the main urban structures (city walls, repair of roads and bridges), building control and urbanisation of the area to the west. Some of the most important urban works, namely the building of the *Bairro Alto*, were in fact accomplished during this period. Phillip II of Spain (I of Portugal) developed also some important architectural projects marking his sovereignty over Portugal's major city. The country's urban embellishment program was fundamentally directed to the political centre of the city: the royal palace was improved by the construction of an imposing tower at its south end, just opposite the river, replacing the old fortification erected by D.Manuel I, and by some refurbishing works in the Queen's apartments and the Royal Chapel. The Royal Tower (known as *Terzi* Tower, although its plan was probably the work of the Spanish architect Juan Herrera, b. 1530 – d. 1597) represented, thereafter, a symbol of the royal palace in *Terreiro do Paço* (**Illustration 23**). Its memory was kept in the towers built at both ends of the new architectural ensemble of the Pombaline *Praça do Comércio*, which replaced the old square. The church of *S. Vicente de Fora* (1627) represented another architectural imprint of the Spanish sovereignty. It was built on a hill facing the old part of Lisbon, according to the new artistic taste of the Roman counter-reformation: Mannerism (**Illustration 24**).

With the Restoration of Independence in 1640, the Bragança family occupied the throne of Portugal. After D. João IV's death in 1656 (the leader of the conspiracy against Spain), his son D.Afonso VI succeeded as king. Nevertheless, D.Afonso VI was soon replaced by his younger and more resolute brother and imprisoned. The new king, D.Pedro II ruled during most of the second half of the seventeenth century until the first decade of the following century.

23. **The *Terreiro do Paço* in Lisbon (18th century).** Inscription (in Spanish and French): "Vista y Prospectiva del Palacio del Rey de Portugal – Vue du Palais du Roy du Portugal" ("View and Perspective of the Palace of the King of Portugal"). **George Balthazar Probst**. It shows the royal palace and a section of the *Terreiro do Paço*; the *Corte Real* palace; the *Ribeira das Naus* and a perspective of the *S. Francisco* hill. Despite the inaccuracies it gives an interesting view of the royal palace with its imposing tower, of the *Terreiro do Paço* featuring a fountain which, at the time, embellished the square; of the layout and scale of the *Corte Real* palace (1585), built during the Spanish sovereignty and, most significantly, of the relationship between the city and the river.
Coloured engraving.
Dims: 480x500 mm.
**MC (Lisbon).**

**24. *S.Vicente de Fora* Church (Lisbon).** Begun: **1590.** Architect: **Baltasar Álvares.** Published in Correia, José Eduardo Horta, "A arquitectura – maneirismo e 'estilo-chão'" *História da Arte em Portugal – O Maneirismo*. Vol. 7. Lisboa: Publicações Alfa, 1986.

The prolongation of the Restoration war, which opposed Portugal to Spain up until 1668, rendered urgent the rebuilding of the city walls. These defences dated from medieval times and were not able to sustain the attack of modern artillery. Also, despite having been constantly repaired, particularly by the Spanish municipal administration, the city had long since expanded outside its perimeter. Thus, foreign military engineers were appointed to build a new circuit of fortified walls according to new Renaissance architectural principles. The main purpose was to build a solid and durable defensive structure. To this end, it was crucial to consider the city's potential growth. The projected circuit of walls was, therefore, too vast to be feasible in a short period of time and too expensive to be financially viable at a time of war. Consequently, the military engineer Jean Gillot designed another project reducing in half the number of bastions (from 32 to 16). However, this new project was never carried out. In the early eighteenth century, the first project, amended by a team of Portuguese military engineers, was finally accomplished. This new defensive line became a reference of Lisbon's developing area up until the following century (16) (**Illustration 25**).

Obviously, the Restoration war period prioritised the response to military urban demands. However, some actions were taken in order to make more convenient the city centre maze, for example the opening of the *Rua Nova do Almada*. Also, following a trend began in the late sixteenth century, the Crown and the aristocracy promoted the foundation of a great number of convents and churches, namely of English and Irish religious orders which sought protection in Portugal and Spain after being expelled frompost-Reformation England. Also, the building of a significant number of noble houses was carried throughout the seventeenth century, essentially before and after the Restoration war (17).

Between 1640 and 1668, Lisbon suffered the human and financial hardship caused by the Restoration war. In the 1660's, the royal treasury was exhausted and Lisbon was growing out of control. When finally peace with Spain was signed in 1668, the Crown directed its attention to the problems afflicting the capital city. The city council minutes dating from this period reflect this concern and the awareness that Lisbon lacked the facilities and improvements of other European capital cities at the time. The cleaning and the lighting systems are the first problems to be mentioned:

"In the first years after the acclamation [acclamation of independence], it lacked the men called the *carretões* [people who drove or pulled carts, as they pushed the cars used to transport the city's litter], who were forced to do the main city cleaning and with the war it was not possible to find others of this inferiority who were willing to do this service. In the city council, the number of discussions of this matter grew, as the people's complaints continued and the orders from the government were multiplying, not only because of the unmanageable state of the city squares, but also as a result of the foreseeing danger" (18); "Being understood that it will be very convenient


**25. Plan of Lisbon's defensive walls (1761)**. Published in Silva, Vieira da, *Plantas Topográficas de Lisboa* (1950). Represents Lisbon before the earthquake of 1755. In red, surrounding the Castle Hill, and descending to the river, it is marked the old Moorish walls (*Cerca Moura*), which were kept after the conquest of Lisbon (1147) by the first Portuguese King, D. Afonso Henriques. The defensive line to the East and to the West of these walls was built by the king D. Fernando, at the end of the fourteenth century (1373/75). See illustration 22.
**MC (Lisbon).**

and beneficial to the people the lighting at night of the city streets, as happens in other foreign countries..." (19).

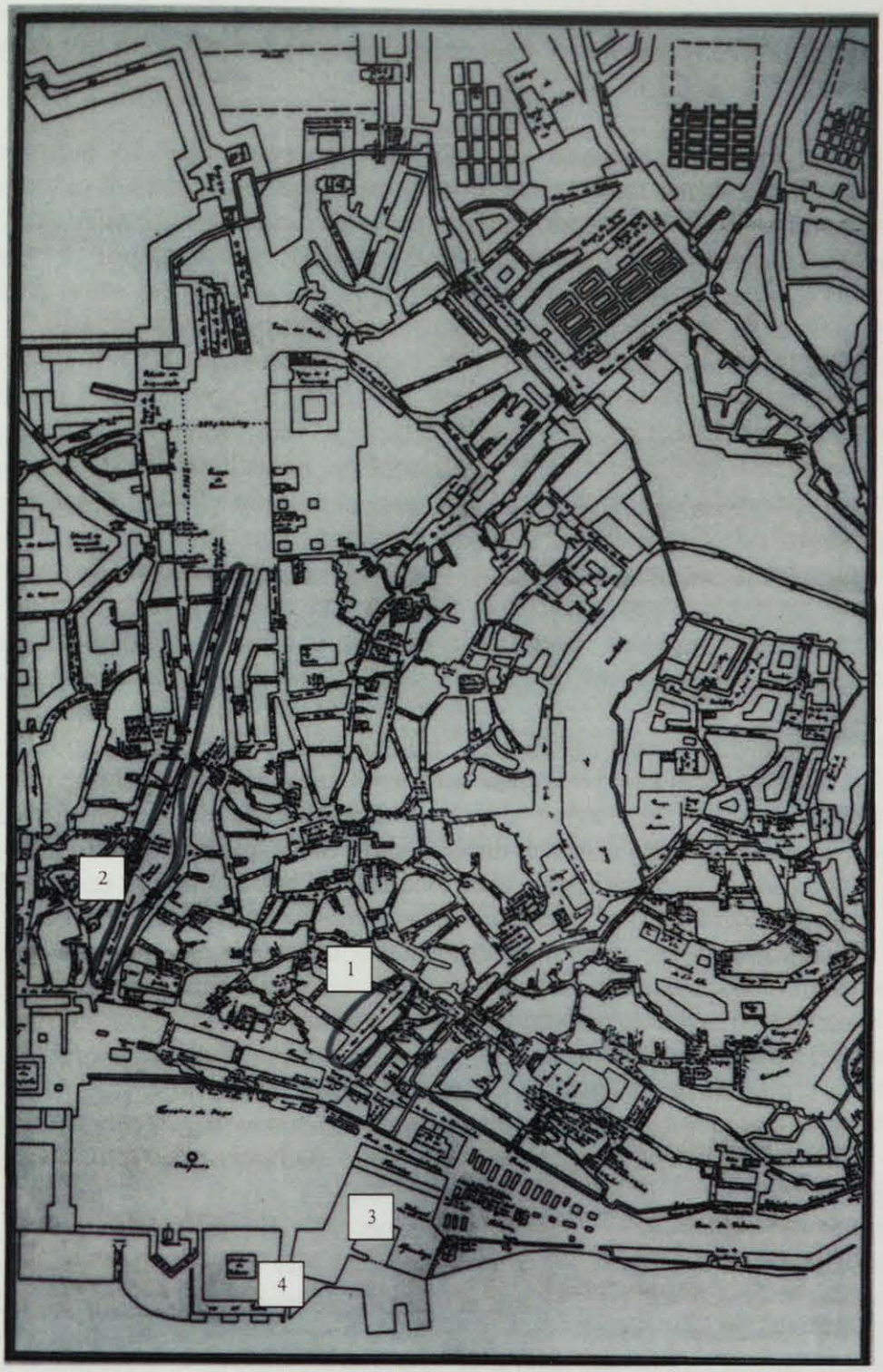
The king directed also his attention to the city council administrative and financial situation: "As I have decided to give a new disposition to the city council, and for its good management and for the people's welfare it is convenient to know with certainty how much are its proceeds, the expenses used and what has been mortgaged, to decide what seems to be convenient ..." (20).

The chief problems afflicting Lisbon at the time were also striking other contemporary European capital cities: building control, the repair of roads and bridges, traffic, street cleaning and the scarcity of financial resources. The circulation of coaches was a serious constraint to the winding and narrow urban structure of most European cities. Lisbon was not an exception. As a result, the Crown and the city council resumed and amplified a road enlargement program following town planning proposals in development from the sixteenth century. Three major works of this kind took place after the Restoration: the opening of the *Rua Nova do Almada* (Almada New Street) and the enlargement of the *Rua dos Ourives da Prata* (Silversmiths Street) and *Rua dos Ourives do Ouro* (Goldsmiths Street) (**Illustration 26**).

*Rua Nova do Almada* was built according to a project dating from the Spanish occupation. It linked the downtown to a new area developing to the west - the hilly area of *Chiado* - and soon became one of the busiest in late seventeenth century Lisbon. The city council's representation to the king (*Consulta da Câmara ao Rei*), emphasising the urgency of the project, is particularly revealing of the town planning discourse of the time. It also expresses the type of relationship developed between the city council and the Crown with regard to urban issues:

"Sir - The manner that our Lordships the kings, your Majesty's predecessors, ordered the disposition of this city's squares, streets and buildings, was certainly adapted to the old times when they were built, to their tradition and possibilities, and also to the greatness and ostentation of the nobility at the time. However, the magnificence of the subjects and the opulence of the carriages and litters, which were not used before, have grown in such a manner that already at the time of the sovereignty of Castille the city council was ordered to put into practice the opening of a new road, just off the *Espírito Santo*, at the entrance of the *João Deus* alley, which comunicates with the *Fangas da Farinha*, ... determined our Lordship king D.João the 4$^{th}$,your Majesty's father, that this road should be opened with speed ..." (21).

Following a practice dating, at least, from the Manueline period, a system of appraisers (*louvados*) was used as a means to solve the problems posed by the landowners who refused to sell their properties; both parties, the



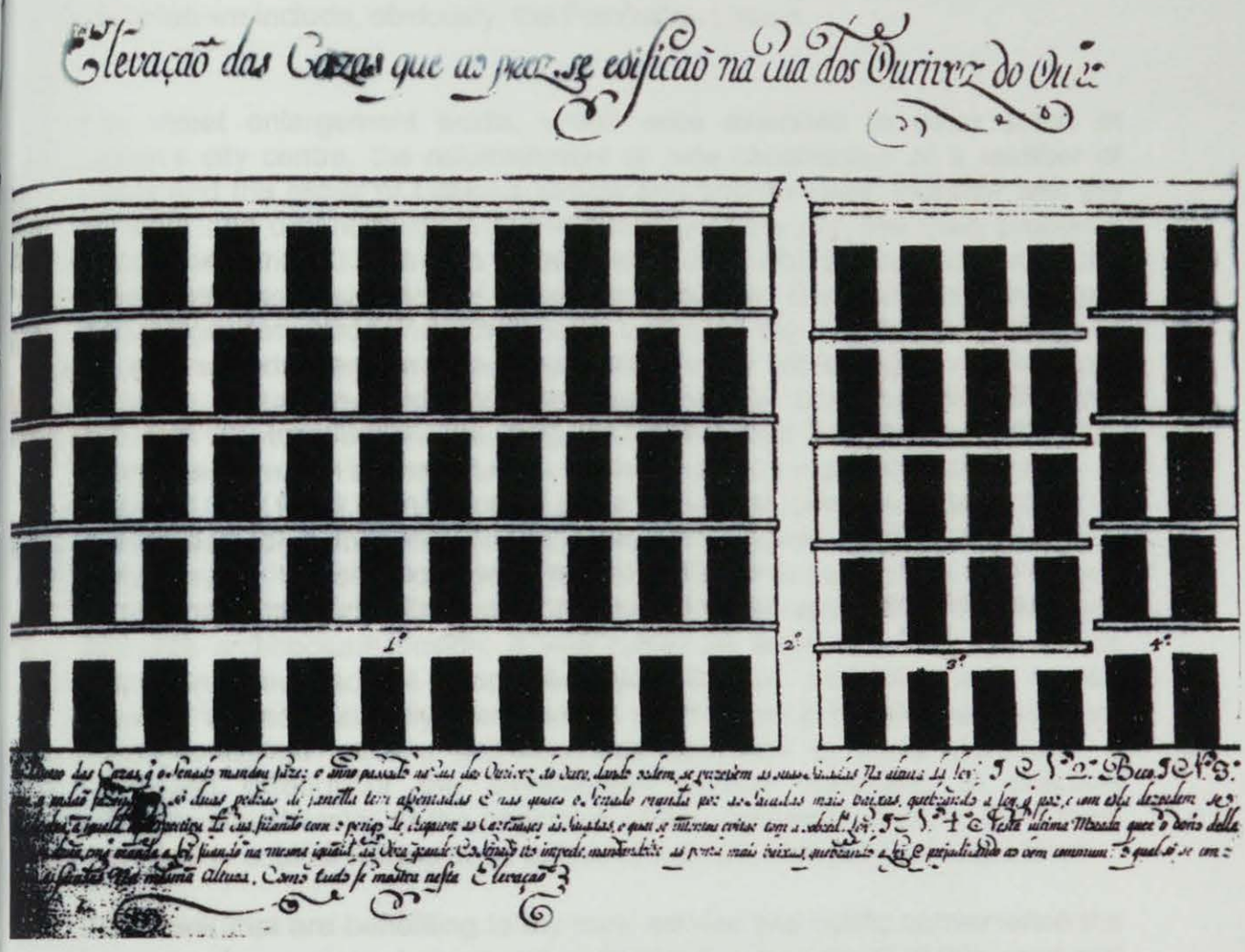

**26. Detail of the plan of Lisbon before the earthquake of 1755.** If we compare this plan with the plan of Lisbon dated 1650 (**Illustration 18**), we can notice the urban works carried out in Lisbon from the mid-seventeenth century, namely the enlargement of the *Rua dos Ourives da Prata* (1) and *Rua dos Ourives do Ouro* (2) and the refurbishment of some of the public buildings in the *Terreiro do Paço*: Customs House (3) and the Customs House of the *Jardim do Tabaco* facing the *Cais da Pedra* - Stone Quay (4). This plan was based on the old plan of Lisbon used for the reconstruction: see plan in the **BN (Lisbon) (D.107 R.)**, similar to a plan in the **GEAEM (Lisbon)** and plan in the **IGP (Lisbon) – old maps 356**.This is a copy of the original made by José Valentim de Freitas in the XIX century. **BN (Lisbon) 109 R**.

landowner and the city council appointed two appraisers each in order to estimate a fair price for the property which was then bought by the latter.

The example of *Rua Nova do Almada* was used in other situations and particularly in the enlargement of another of the busiest streets in Lisbon's city centre: the *Rua dos Ourives da Prata*. The magnitude of this latter project rendered it thereafter a model town planning experience. Twenty six properties were bought by the city council and were demolished in order to open a spacious and regular street. The success of this enterprise encouraged the Crown and the city council to enlarge the nearby *Rua dos Ourives do Ouro* which represented the fundamental link between the two major squares of Lisbon: the *Terreiro do Paço* (Palace Courtyard) and *Rossio* (**Illustration 27**). The Crown stressed the importance and urgency of this project causing the city council to respond promptly to the demand. However, financial restraints and legal conflicts delayed the process. As happened in other large European cities, financial and legal issues were the main problems posed to Lisbon's city council in its daily town planning activities. They seemed to have been a serious obstacle to the good development of the works in *Rua dos Ourives do Ouro*. However, the Crown was aware of the crucial importance of this street enlargement scheme for the improvement of the circulation in Lisbon's city centre and supported the city council in the use of all the available financial and legal expedients. The combined effort of both the Crown and the city council in this case is expressed in a vast number of documents. They are valuable data of the town planning procedures and principles used in Portugal at the time:

"The city council, seeking to show its obedience in the execution of Your Majesty's orders and its zeal with regard to the public convenience, proceeded to employ the money resulting from the sale of some of the *offícios* [craftsmanship licenses] on the purchase of some of the many houses needed for the referred to work, in order to begin it, which has not been possible up until the present as some of the landowners have delayed the demolishing of the properties and the beginning of the works with legal appeals to the Royal Court, after the evaluations being made and accepted; and as the works concerning the public convenience cannot be hindered with such petitions, after being valued according to the law by the appraisers, the correct value is given following what the law states for these situations in order to avoid the demolition and the public work being prevented, this is the manner followed in European countries, as it is a rightful procedure, this is the manner followed when *Rua Nova do Almada* and *Rua dos Ourives da Prata* were made, ...which all considered, the city council decided to inform your Majesty of the situation so Your Majesty be served to declare that after all the appraisals of the properties have been made, according to what has been stated, the city council can proceed to take them and to demolish them ..." (22).

The articulation between the spatial and architectural solutions and the treatment of the legal and financial issues in both cases (*Rua dos Ourives da*




27. ***Rua dos Ourives do Ouro*** **(Goldsmiths Street), Lisbon (early eighteenth century).** Elevation of the new buildings. *Livro I de Cons. e Decr. De D.João V, Senado Ocidental*, fl. 220 (131).
**AHCML**.

*Prata* and *Rua dos Ourives do Ouro*) represent, unquestionably, a source of inspiration for Lisbon's town planning history in the eighteenth century. In this assertion we include, obviously, the Pombaline Lisbon.

The street enlargement works, which were extended to other areas in Lisbon's city centre, the refurbishment or new construction of a number of quays and the repair of Lisbon's streets and bridges were, together with the constant and urgent problem of the cleaning of the city, the main problems addressed during D.Pedro II's sovereignty (see p. 65). During this period, the Crown with the assistance of the city council used the vast experience and knowledge gathered since the major works of the Manueline period. As already stated, there was a clear intention of reforming and improving Lisbon's urban structure and infrastructures. To this end, following the sixteenth century experience, enriched throughout the Spanish rule, the Crown and the city council tried to make effective a more consistent body of technical and legal town planning rules. The main concern was to build or rebuild according to a number of architectural norms aiming for a regular spatial layout. Various documents with regard to this issue state the "unique plan" legal imposition. Obviously, this unique plan was not a detailed and inflexible architectural design. It was rather an ensemble of formal norms concerning architectural proportion, durability of materials and regular façades. We have already seen that this trend began in the Manueline period, which conceived quite a well-structured approach to these questions. It developed throughout the seventeenth century according to practical experience and taste. At the beginning of the eighteenth century, the Crown and the city council felt the need to give to it a reformed juridical expression:

"As I think that are benefiting to my royal service and public convenience the following observations, I command and order the city council of this court and city of Lisbon, despite any contrary laws, norms or uses, to forbid that any street or alley be opened without a public entrance and exit of no less than five *varas* [ancient linear measure: one *vara* equalled five *palmos craveiros*] or twenty five *palmos craveiros* [ancient linear measure: one *palmo craveiro* equalled twelve inches] of width, inside or outside the urban settlement; however the main and busiest streets and roads will follow the width and style used in others already opened, inside and outside this city, as happened with the Goldsmith ones and other similar; and that within the right and convenient distances, squares should be opened with capacity for the public service; and that in the areas where many low flow streams are joined and streams flow to, exits to the beaches should be found, following the example of the *Cano Real* which runs beneath *Terreiro do Paço*. And to bring about the execution of this and all that will concur for the convenience, symmetry and embellishment of the city, I much recommend to the same city council the distribution of this edict by the judges of this jurisdiction and any persons related to it, and the use of all the means to achieve it, in order to avoid, according to the news I am receiving, the deformity of the newly built streets and neighbourhoods, which we expected to be improved by the extension works..." (23).

In 1752, the city council issued a legal document reinforcing a determination already expressed in the city council town planning strategy since the previous century: "...from this day on any works to be carried out in this city ought to be approved in writing by this city council" (24). Another decree, dated from 25 August 1755, ordered the building of new streets with a width allowing the passage of two carriages (25).

The maturation and assimilation of these principles are easily identified in the private petitions to the city council. Landowners used frequently these same concepts to reinforce their demands:

"The works carried out by private landowners, essentially religious ones, were carefully examined by the city council and were only approved if they did not add to the deformity and the distastefulness of the street. They are many requests for the enlargement of vestries or the building of new chapels. The city council experts examined the petitions on the site, and requests of as little as four palms of ground are often refused on the justification that they could be a serious obstacle to the traffic in the area. Sometimes, we have the private landowners intending to open courtyards near their palaces and convents. Once more, it is the use of carriages that determines the need of these works. Essentially in these situations, even the landowners often appeal in their requests to the public convenience and urban embellishment" (26).

Obviously the mere existence of building legislation was not enough to enforce its application. The relative inefficiency of the juridical system is pictured in the frequent city council complaints with regard to illegal building. This situation is even referred to in the royal Decree of 13 April 1745.

The city council discourse reveals a clear idea of the city and of the need to change mentalities according to a broader perspective of Portuguese society:

"...It seems that we should not in any case allow 3 palms of ground to be taken, as no part should be taken of such a major road when the city council is enlarging passages and straightening streets...; and that the great number of convents being built in the city, with great inconveniency of the public and against all the political reasoning, is a matter to be considered by Your Majesty, as God has been better worshiped and served with fewer convents" (27).

In the early eighteenth century, the wealthy Joanine period used extensively the seventeenth century Portuguese legacy with regard to town planning. In Lisbon, the Crown continued a program of urban reform and embellishment according to a well-defined political and artistic project. In parallel with the royal works in the city centre, the improvement of the city's structures and infrastructures was maintained and even extended: roads were enlarged and

repaired, quays were rebuilt, public buildings were refurbished and newly constructed and an aqueduct was built across the city, representing the major urban work of the period (**Illustration 26**, p. 93 and **Illustration 28**). As already mentioned in the previous chapter (*Portugal in a European context*), D.João V promoted a vast program of works aiming for a European projection of Lisbon. Within a wider program envisaging the modernisation of Portuguese society, Lisbon was embellished, extended and reordered. The main ideas presiding over this project were already maturing since the previous century; Brazilian gold and diamonds provided the financial support to the project. Joanine Lisbon had a symbolic and practical character. It was programmed and developed as a *new city*, which could be able to perform as the capital city of the increasingly rich Portuguese Empire (28). The Roman baroque taste, unfamiliar to the Portuguese baroque preferences, was chosen in a clear attempt to give to Lisbon a European image: "... to give to Lisbon the urban scale of a European capital city by placing it in a political, religious and cultural context of similar characteristics and to achieve it by the use of the artistic expression of the international baroque expressed in projects conceived with a scenographic significance"(29).

The town planning movement of the early modern period was developing according to some precise conceptual principles but was, nevertheless, enriched and made efficient by experience and pragmatism. Portugal is a revealing example of this assertion. The combination of a centralised political power developing a clear program of town planning procedures with the technical and administrative expertise of the city council and its architects are the key for the understanding of Lisbon's urban development at the time. The technical and the legal perspectives were different sides of the same coin and were looked upon as operative tools.

The role of the architects and the military engineers in this process was crucial. The Crown and the city council made good use of their knowledge and experience. The military engineers' contribution, given their primary role in the architectural and urban creation in the Empire, was fundamental. Throughout the seventeenth century, the increasing importance of the military engineers not only as architects but also as urban planners is clear. In the Joanine period, the military engineers' importance as urban experts was such that the king did not hesitate to use their skills in the vast program of works developed in the capital city: "However, what in fact was built used their practical knowledge as never had been done in Lisbon. We can state that D.João V sought Italian baroque design for the staging of the buildings representative of his political power but ultimately used the experience and the work force of the military engineers to build what was accomplished" (30).

Town planning ideas and procedures developed hand in hand with the evolution of military engineering. In Lisbon, the increasing importance of the city council architect, generally a military engineer, helped decisively to structure a town planning practice and a building legislation. After the


**28. *Águas Livres* Aqueduct (1731-1748). View from the *Alcântara* valley, Lisbon (19th century).** Inscription: "Aqueducto das Aguas Livres, junto a Lisboa" ("*Águas Livres* Aquaduct, near Lisbon").
**MC (Lisbon)**.

Restoration, for financial reasons, the city council decided not to appoint a council architect. However, soon the Crown and the city council realised that the role of the city council architect was fundamental in the implementation of a coherent and global town planning program. During the first half of the eighteenth century, their involvement in the urban works becomes total: Eugénio dos Santos (b. 1711 – d. 1760), the city council architect at the eve of the Earthquake of 1755, asked permission to be present at every city council work. Renowned military engineers were also appointed as city council surveyors in order to improve the quality of this service (31). It is interesting to note that not all of the city council officials supported Eugénio dos Santos' petition. However, the mayor issued the following document, which is very enlightening of the prevalent town planning ideas at the time:

"...it seems that there should be no doubt with regard to this subject, as in the referred-to dispatch it is stated that the petitioner will be present at the surveys of buildings in public sites or areas, and of all concerning the city adornment, symmetry and appearance and the width of its streets, and this includes all the possible surveys as it is sure that there is not a survey which does not relate to the city adornment and symmetry" (32).

In the morning of the 1 November 1755, when the great earthquake struck Lisbon, the city council had exhausted its financial resources in trying to make the city centre more convenient and spacious. If the catastrophe rendered these efforts fruitless, it did not erase the vast experience acquired meanwhile. The teaching and practice of architecture and town planning procedures in the kingdom and in the empire developed as a result of new political and economic demands and contributed, in turn, for the maturing of a new idea of the city. This new understanding of the city, of the spatial and architectural layout and its social function presided over the Pombaline plans.

The importance of military engineering in this process was so considerable that the history of its development and its contribution to the Portuguese architectural and town planning panorama deserves a particular, even if brief, reference.

## 2.2- The role of the military engineering[7]

Since the late medieval period, geometry has been a fundamental tool of town planning: the measuring of the territory and the layout of the new streets. The centralisation of the political power and the new military strategies used geometry as an architectural and town planning ordering element. The Renaissance period structured this new approach for the concept and the planning of the city.

[7] Notes p. 132

Given its particular political circumstances and military needs, Portugal was forced to give to military architecture a privileged role in its overall architectural and town planning production. Throughout the fifteenth century, the Portuguese were not receptive to the new architectural defensive designs. In the kingdom and in the empire, they persisted in the use of late gothic military solutions: "In Portugal, as a result of the great development of the military construction of the late gothic, with its elegant and decorative shaped castles, the reactions to the *gunpowder revolution* were slow" (1).

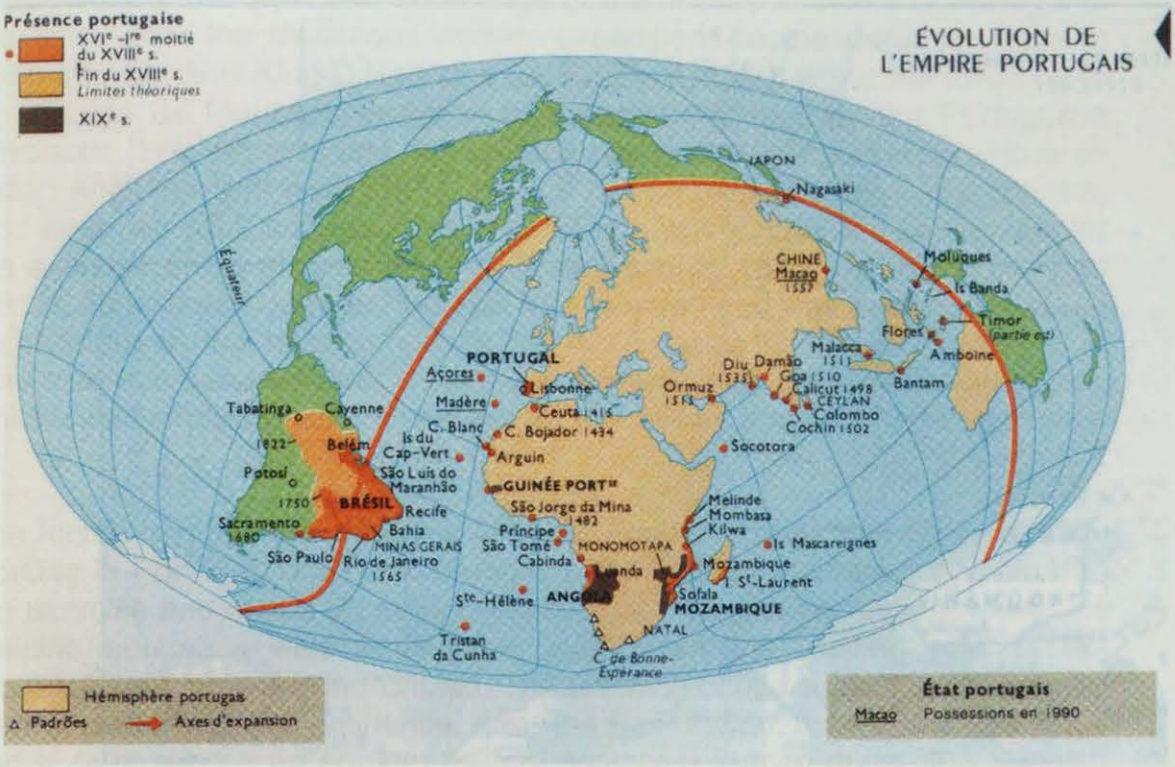
The opening of the maritime route to India in 1498, after almost a century sailing along the African western coast where some coastal trade *entrepôts* (storehouses) were build, reinforced the need to maintain the political and military control of a trade route which went from the north of Africa to China. At the beginning of the sixteenth century, access to Indian merchandise was the main objective of the Portuguese Crown. In order to protect the Portuguese primacy in this trade, the Crown defined an expansionist strategy which aimed for the political and military control of all of the strategic commercial locations: from Africa to India, the Portuguese left a trail of fortresses marking their presence and assisting and supporting their trade. Up until the late sixteenth century, the Portuguese Crown directed its main energies and resources to this venture. This had a major impact on the theoretical and practical approach to architecture and urban creation in Portugal: these military and commercial settlements were, with the human and artillery resources, the Crown's main assets. As Renata Araujo stresses: "An element, however, will transform the trade centre into Imperial territory – the fortress. The action of *making a fortress* is proudly quoted in the Indian chronicle as the guarantor of the Portuguese sovereignty. Under the protection of the fortresses, in the territory established by them, appeared the first urban settlements. From the repetition of this process originates the initial paradigm of the town planning movement of the Portuguese expansion which connects the city to the fortress" (2).

India is a rich example of the first stage of the Portuguese actions with regard to new overseas urban foundations. At the beginning, the Portuguese concentrated their efforts on the protection of pre-existent urban settlements. The main objective was to secure a position in the existing trade network. With time, the Portuguese understood that in order to achieve their commercial objectives a more effective presence was required. Thus, from the mid-sixteenth century, the Portuguese developed in this territory a new strategy, afterwards extensively implemented in Brazil. This involved a process of colonisation, trying to integrate these urban settlements into the Portuguese cultural and religious context (3). The fifteenth century venture, known as the "Discoveries", was therefore replaced by a more structured approach to an expansionist project. The ultimate objectives were perhaps the same but the tools were different and this new policy took into account the new military strategies and techniques in development throughout Europe: "In the context of the art of war, taking into account the East and North of Africa demands, we evolved from the intelligence work and experimentalism of the

sovereignties of D.João II [1481-1497, b. 1455] and D.Manuel I to the massive import of knowledge, in the shape of texts and drawings, by the sending of students and the recruit of experts, especially Italians" (4). Despite the vicissitudes of the political and economic contexts, the main mercantilist expansionist principles were thereafter always present: the extending of Portuguese sovereignty, in all of its aspects, to the overseas possessions in order to secure the economic colonial dividends (**Illustration 29**).

The sixteenth century saw, thus, the structuring of the military architecture as a defined activity in Portugal. Initially in the empire and promptly in the kingdom, the first attempts were made to build military defences able to sustain artillery attacks. This first moment of military architectural production benefited, obviously, from the Italian theoretical contribution. In the first half of the century, Italian military architects were called to provide the empire with a vast and powerful defensive structure. However, the involvement of Portuguese architects in this process gave to these constructions a national imprint: "This national idiosyncrasy explains why not one Italian design was copied. Benedito's initial projects [the Italian Benedetto da Ravena] were revised at the site by the architects Miguel de Arruda and Diogo de Torralva (...) and were carried out by Castilho's men [the architect João Castilho, very active in Portugal at the time, was from the town of Castillo, in Santander, Cantabria]. Therefore, by an impressive combination of efforts (which was new at the time), Portugal was swiftly acquainted with the most recent developments in the subject of military defences" (5).

Throughout the century, military architecture as a subject and a practice evolved between these two different sources of influence: the European contribution, essentially Italian and German and the national experience. From the mid-century there was a strong impulse of the latter as a result of the cultural options of King D.João III (1521–1557, b.1502) and the knowledge meanwhile gathered by the Portuguese architects (6). At the end of the century, the aggressive political and military policy of King D.Sebastião gave yet another boost to the practice of military architecture in Portugal. The kingdom and the empire were widely opened to European influence (foreign military architects were called to build and to teach) and to the work of Portuguese experts. The late sixteenth century also saw the first attempts to introduce the teaching of this subject in the education of the Portuguese noblemen. António Rodrigues, author of a treatise in the subject, was the first to introduce the discipline in the *Aula do Paço* (Royal Palace Class): "The two treatises (or two different versions of only one treatise...) which we identified and attributed some years ago to him ... give us a faithful picture of this teaching system: absolute dependence on the Italian treatises; use of Serlio and Vitruvius's works as the pupils' textbooks; good classical education linked to an impressive scientific culture which goes from Renaissance musical theory ... to the cosmography, astronomy (knowing already Copernicus), to a certain inclination for the esoteric mathematics according to a trend at the time" (7). The main purpose was to create in Portugal an educational system able to form a national group of experts: to this end the Crown used not only




**29. The Portuguese Empire.** Published in Duby, George, *Atlas Historique: l'Histoire du Monde en 334 cartes*. Paris: Larousse, 1996.

the foreign contribution but also the national expertise. This first attempt was resumed during the Spanish occupation by the establishment of the teaching of military architecture in a Jesuit school (*Colégio de Santo Antão*).

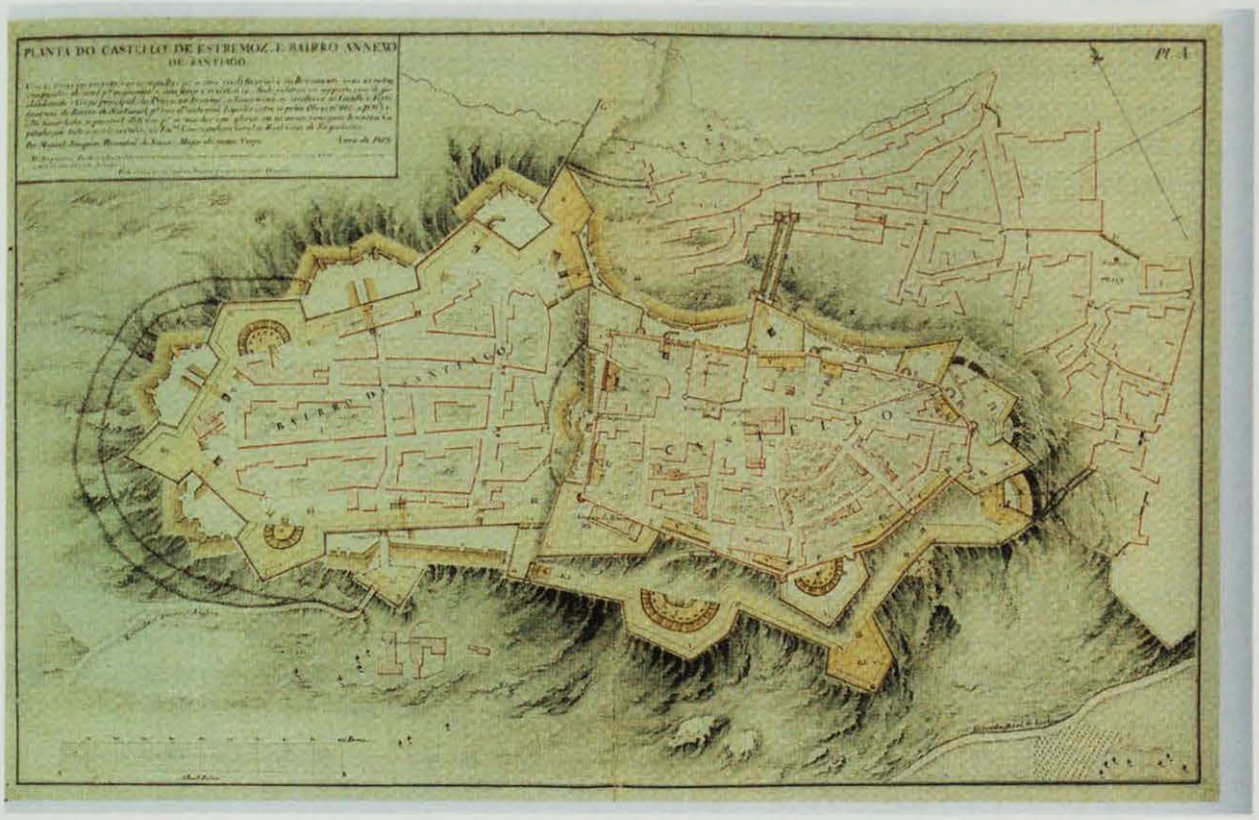
A curious letter dating from the late sixteenth century illustrates the importance of the skills and knowledge of the military architect in Portugal at the time: after the disastrous military expeditions to the north of Africa in 1578, the Cardinal King D.Henrique (b. 1512 – d. 1580) wrote the following to D. Rodrigo de Menezes assigned to rescue from captivity the Portuguese prisoners: "You will care and remember to know about Filipe Tercio who is an Italian engineer and went in the army of our Lordship the king, my nephew, God keep his soul, and rescue him as he is a useful man and convenient for the exercise of his profession" (8). Filippo Terzi (b. 1520 – d. 1597) or Filipe Tércio, as he was known in Portugal, was rescued and was assigned to teach architecture at the royal school during the Spanish rule. It is interesting to note that the Cardinal King D.Henrique names Terzi as an Italian engineer, which clearly indicates that a new era for the military architect had begun.

The Italian engineers, who came with the Spanish troops and those already working in Portugal, like Terzi, brought to the country a different approach to the exercise and status of military architecture. The military engineer, with his specific education and attributions, was given the leading role in the architectural production in Portugal. The teaching of this subject in the country strengthened their pre-eminence. After the Restoration, the Portuguese kings had in their service an army of military engineers formed during the Spanish occupation, which in turn had used the experience gathered by the Portuguese throughout the 1500's: "On achieving the political power, the Restoration regime found, thus, a homogenous and dynamic body of military engineers based on a solid institutional structure which was kept intact: these conditions made possible the gigantic buttressing effort carried out from 1640, without which Portugal would not be today an independent nation" (9).

Throughout the seventeenth century, the vulnerable and unstable political situation in Europe and the maintenance of the various overseas empires gave a predominant role to military engineers. Again Portugal was a significant example of this phenomenon. In the second half of the seventeenth century, the political, military and financial vulnerability of Portugal promoted the military engineer as an architect and urban planner. Their pragmatic and diversified education allied to the strict discipline to which they were submitted, made them the most reliable and efficient body of constructors. On the other hand, the experience and knowledge acquired by the military engineer in the various locations and projects where they had to perform gave to them an avant-garde role in the cultural and artistic production of the country. This fact contributed largely to the international character of military engineering as a subject and a profession.

In the second half of the seventeenth century, first for military reasons and then for financial and cultural issues, the Crown continued the task of educating Portuguese military experts. During the Restoration, the vast enterprise of protecting the kingdom required the use of foreign military engineers. All through this period, the most sensitive cities with regard to military strategy (those near the borders or leading to the main cities) were extensively re-fortified (**Illustration 30**). Some foreign military engineers had a prominent role in this process, for example the Jesuit priest Joannes Ciermans (b. 1602, in Bruges – d. 1648, in Portugal), known as João Cosmander; Legarte, who worked for the king of France; Jean Gillot (Netherlands – was active in Portugal c. 1650-1652), sent by the Prince of Orange; Nicolau de Langres (French; b. ? – d. 1665) and the Earl of Schonberg (worked for the French Cardinal Mazzarino and came to Portugal c. 1660 to survey Gillot's plan) (10). However, the Crown soon realised the importance of having available a competent and organised body of Portuguese technicians: "and is convenient to educate national individuals as they are less expensive and more reliable than the foreign" (11). Both aspects, military strategies and military defences, were part of the same subject. Military engineering produced artillery and building experts, however both disciplines were complementary. The trend was, thus, to improve and to extend the teaching of this subject. From the late seventeenth century an educational system was implemented throughout the kingdom and the empire: "The method of teaching is as pragmatic as the methodology to be transmitted and is based on the assignment of an able and experienced engineer who is designated to teach all who wanted and had talent to learn" (12).

Instruction of military architecture developed parallel to the education of the civil architects, which was in place from the late sixteenth century. This latter school (known as *Aula do Paço*) instructed and graduated the royal architects: "The teaching of civil architecture in the *Paço da Ribeira* [Ribeira Palace], and of the military architecture or military engineering, according to the designation used from the seventeen hundreds, in the *Aula da Fortificação* [Fortification Class], later Military Academy, did not completely separate the civil architect from the engineer; on the contrary, it completed the education of our most qualified experts who, in almost every situation, obtained the two graduations" (13). However, the pre-eminence of military engineering in the overall architectural and town planning movement in Portugal soon gave to the teaching of the former subject a wider and more significant character (14). Thus, from the *Aula do Paço*, which survived throughout the Spanish occupation, and the *Aula da Esfera* (Astronomy class) at the Jesuit school of Sto Antão, the teaching of military engineering evolved to the well-structured *Aula da Fortificação* in 1647. From the late seventeenth century, it quickly spread throughout the kingdom and the empire: King D.Pedro set up the teaching of the subject in Military Academies according to a rigorous, comprehensive and uniform program and this policy was pursued by his son, D.João V, in the first half of the eighteenth century (15).




**30. Estremoz (Portugal).** Plan of the Estremoz Castle and adjacent district of Santiago. Manuel Joaquim Brandão de Sousa, 1819. **GEAEM (Lisbon).**

The works of Vitruvius, Alberti, Serlio and Pietro Cataneo set up in Portugal a conceptual approach to the issue of architecture and town planning, which gained enormously from the experience meanwhile gathered by the Portuguese military architects in the sixteenth century. Throughout the seventeenth century, the formal and the spatial solutions of Portuguese military engineering developed in close connection with the precepts of sobriety, proportional balance and rational ordering. As Rafael Moreira points out, this trend is inextricably linked to the ideas and demands which structured it: "[this] old substrate of the peninsular Mannerist culture, alien to the major stylish mutations, however solidly responsible in its applications to Cosmography and Military Architecture: in other words, to the seafaring and to the military defense, which were the pillars of the Empire and the essence of its culture" (16).

The teaching and the practice of military engineering in Portugal were regulated and structured by the Crown and kept within the boundaries of the military structure: the military engineers served the architecture and town planning in Portugal as the soldier serves the war. The professional careers of most active military engineers are also extremely revealing of the importance of the teaching and the status of the military engineer in Portugal:

"Throughout the seventeenth and eighteenth centuries, the education of the architects and engineers evolved through different stages, always tending to their academic and professional integration. Some began as master masons, as was the case of João Antunes [b.1642 – d.1712], other were carpenters, as Custódio Vieira, who had in 1717 the craft of *mestre carpinteiro de branco* [master carpenter of the woodwork done at the surface of the buildings as: window frames, window sills, steps, skirting boards, etc.] others began their apprenticeship directly through their military career, as in the example of Manuel da Maia [b. 1672 – d.1768], and we cannot forget those who initiated their education through the study of the subjects favoured by the civil and military architecture, as happened to Manuel de Azevedo Fortes [b. 1660 – d. 1749], engineer and teacher at the Military Academy" (17). To this lot we must add Luís Serrão Pimentel (b. 1613 – d. 1679), to whom D.João IV ascribed the direction of the *Aula do Paço* and who was the author of the most significant Portuguese treatise on the subject: *O Método Lusitânico de Desenhar as Fortificações das Praças Regulares e Irregulares* (1680) (*The Lusitan Method of Designing the Fortifications of the Regular and Irregular Fortresses*) (18).

The empire was the main field of experience and the main source of demand for military engineering in Portugal. There, the military engineer built military defences and planned fortified cities. The first fortified Portuguese settlements were planned in the African coast, the Atlantic islands and India. However, when the Indian trade proved to be more hazardous than profitable, Portugal turned to the vast and, to some extent, abandoned colony of Brazil.

Brazil was discovered in 1500, soon after the opening of the maritime route to India. Throughout the sixteenth century, its exploitation was not as important to the Portuguese Crown as the control of the Eastern trade routes. When this enterprise was revealed to be more arduous than advantageous, the Portuguese Crown directed its attention to the South American colony of Brazil. From the first coastal settlements, the Portuguese Crown developed a strategy aiming for the extension of its sovereignty over the whole territory. The feeble human resources of the kingdom made imperative the use of all of the available forces; not only Crown officials but also individuals acted as colonial agents. However, the latter's actions were always maintained under the ultimate supervision and control of the Crown. In Brazil, Portuguese military engineering was able to develop to its utmost. It planned and built cities according to defined administrative and cultural precepts. The colonisation of Brazil throughout the second half of the seventeenth century coincided with the structuring of military engineering in Portugal as a defined profession with its specific educational system. However, rather than a coincidence, this was a dialectic process: the military engineers were educated according to the needs of the Restoration period and to the colonial project and in turn, as a numerous, specialised and accountable body of experts they influenced decisively the implementation of the former. Luís Serrão Pimentel, Azevedo Fortes, Manuel da Maia were military engineers and teachers:

"The book of Luís Serrão Pimentel ... the well-known *Methodo Lusitanico*, printed in Lisbon in 1680 and dedicated to D.Pedro II, reveals a deep knowledge of what was in development in Europe at the time and also gives us the tone of the precepts which regulated our defensive and urban works throughout the century. His knowledge went beyond military engineering and, confirming the diversified character of the discipline in the sixteen hundreds, comprehended cosmography and the art of sailing" (19).

From the second half of the seventeenth century and throughout the eighteenth century, Brazil was progressively colonised through the foundation of a large number of urban settlements. The Portuguese Crown transferred itself to the territory: an *army* of State officials carried out and supervised this enormous task of colonisation. The military engineers were a fundamental part of this group. They created and developed cities, which were able to extend in these territories the administrative and cultural presence and dominance of the Portuguese Crown "The Spanish Crown gave to its colonies a regulation for the forming of the cities. The Portuguese Crown supplied officials to create them. Urban officials, as there were treasury, law and religious officials" (20).

This situation gave to the Portuguese military engineer a prominent role. Centralisation at the level of the political project and pragmatism in the urban intervention marked the Portuguese colonial town planning process. A chequered urban maze structured town planning according to a practice in development in Portugal since the late medieval period. The city was planned

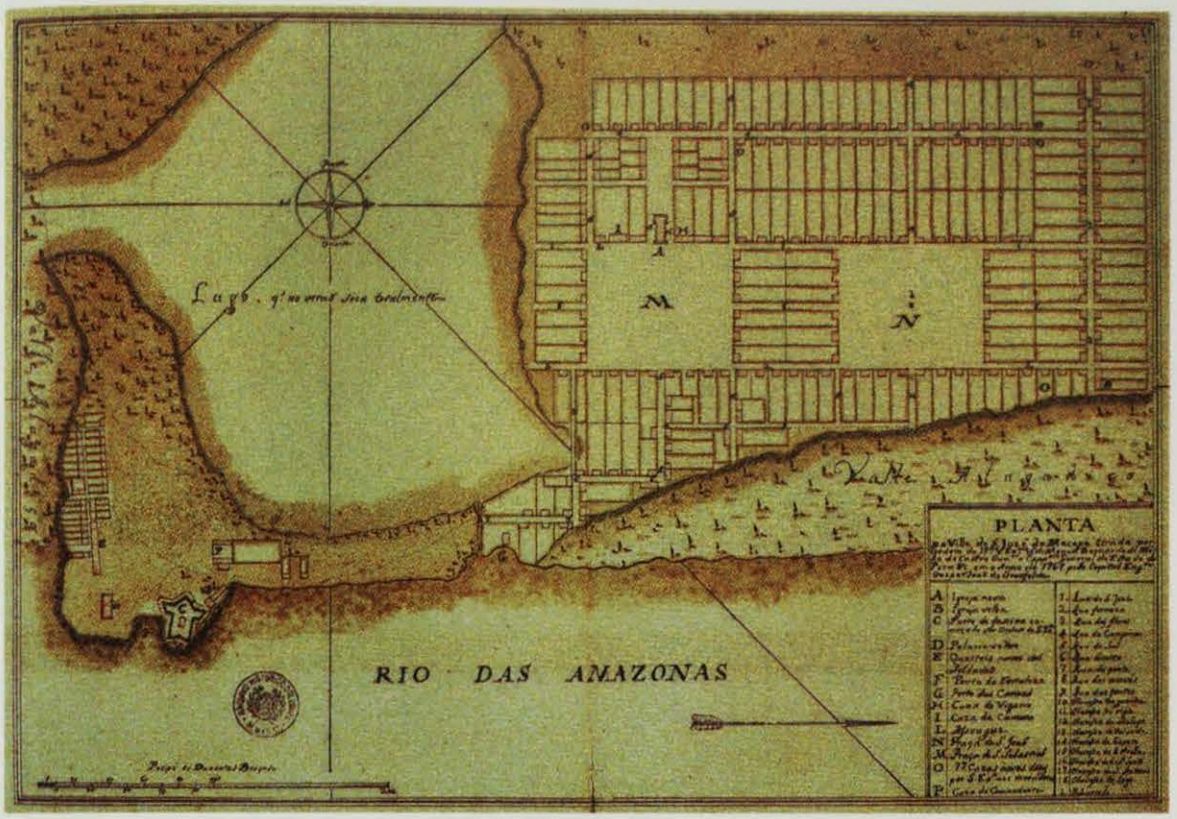
from the main square, where the chief administrative, public and religious buildings were situated (**Illustrations 31, 32** and **33**). Essentially throughout the sovereignty of king D.João V and his son D. José I (first half of the eighteenth century), the main characteristics of the Portuguese colonial town planning program were implemented:

"These normative texts usually included a first reference to the Square with its *Pelourinho,* first area to be demarcated, where the Church, the City Council headquarters and the Prison should be built and from where the streets should run on a straight line. Then, it is established that the houses should be obligatorily built with the same exterior appearance in order to always preserve *the same beautifulness of the location and the same width of the streets*" (21).

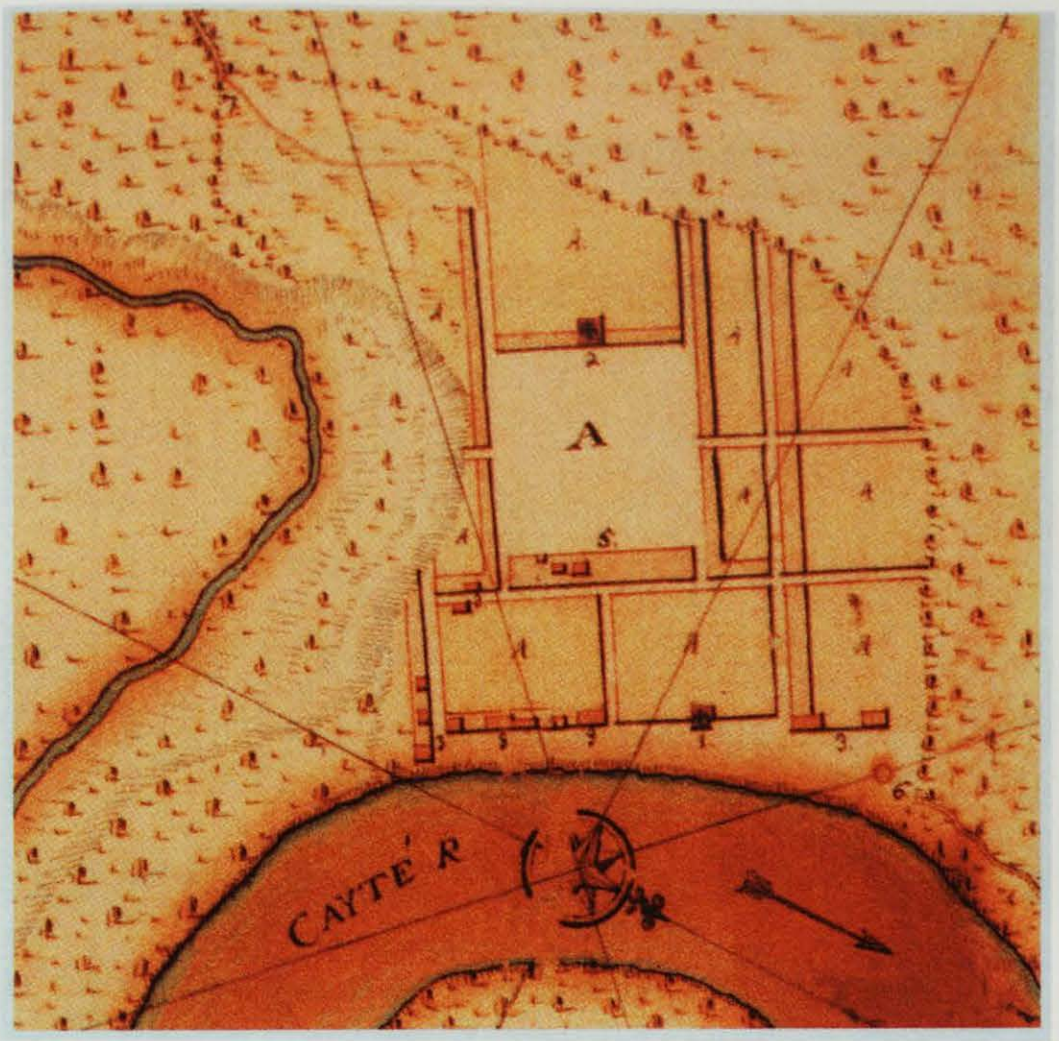
This geometrical layout allows the building of urban centres with a political and cultural value. This trend was reinforced during the Pombaline period: the global approach to town planning is emphasised, deriving naturally from a more consistent ideological project. As Renata Araujo stresses: "The urbanisation in Brazil signified the introduction in the country of not only a physical model of urban settlement, but also of a true early modern urban culture" (22).

These essential town planning guidelines were, however, put into practice according to a pragmatic fashion. The Portuguese Brazilian cities differ substantially from the Spanish and the North American colonial town planning approach. In fact, they do not follow a strict geometrical plan applied indifferently in the colonised territories: "With some variety and great malleability, the military engineers, formed in Portugal or in Brazil, developed throughout the eighteenth century a particular town planning process with a pragmatic character, although it included some theoretical validation" (23). In fact, rather than an inflexible and thorough normative program, the Portuguese Crown opted for the use of the military engineers' knowledge as the main structuring planning element: the *funcionários do urbanismo* (town planning civil servants) as identified by Renata Araújo (24).

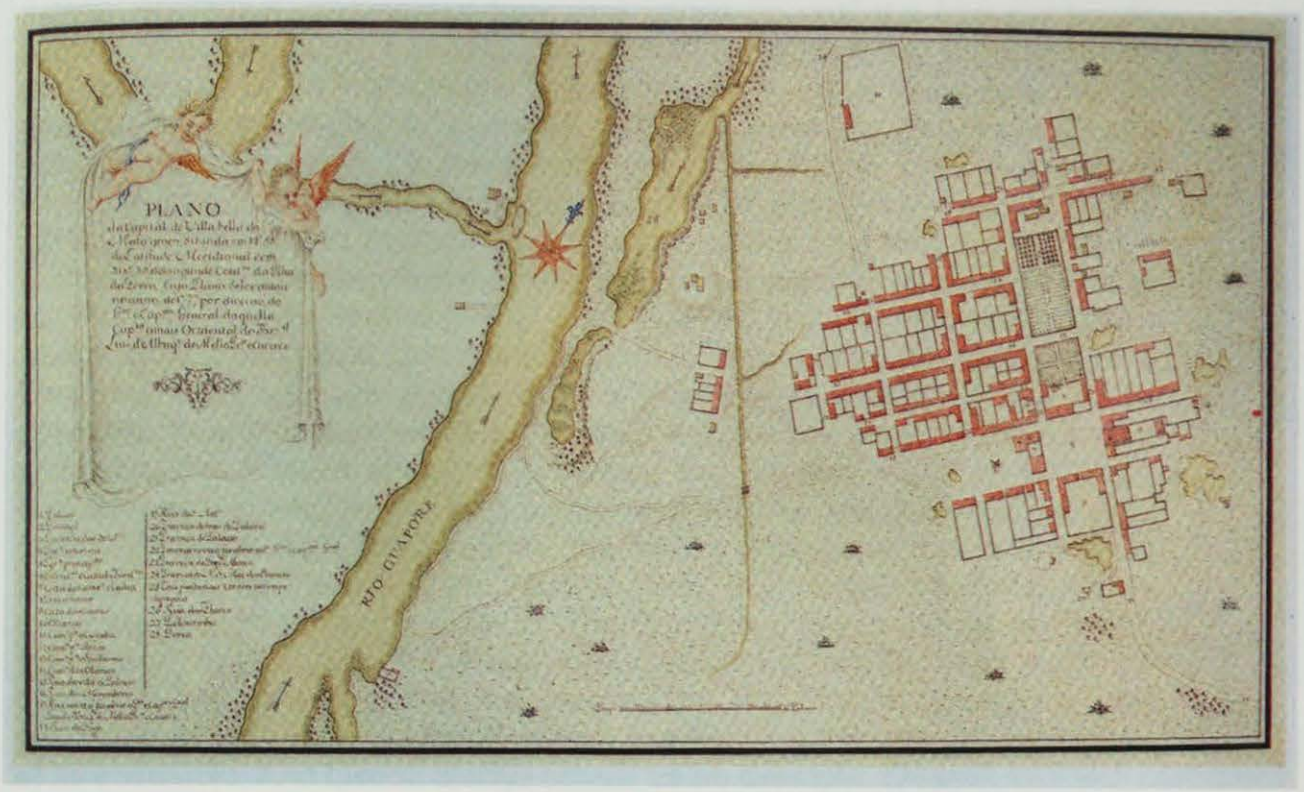
In the kingdom, the role of the military engineers was not less important. The colonial and the European experiences fuelled their performance and sphere of influence. This situation marked profoundly the destiny of the architectural and town planning options in Portugal. Therefore, it is possible to consider the existence of a Portuguese school of town planning having the military engineering as the conceptual and technical tools: "It was that tradition and that practice, promoted by the educational and administrative structures of the 'fortification' and therefore, repeatedly updated, which persisted up until Manuel da Maia and the group of officials chosen by him to rebuild Lisbon" (25).




31. **Plan of *S. José de Macapá* (Brazil) in 1761**. Inscription: "Planta da Villa de S. Joze do Macapa tirada por Ordem do Iil.mo e Ex.mo Sñr Manoel Bernardo de Mello e Castro Gov.or e Capp.am General do Estado do Para & c. Em o Anno de 1761 pello Capitão Eng.ro Gaspar João de Gronfeld" ("Plan of the Town of *S. Joze do Macapa* designed by Instruction of the *Ill.mo* and *Ex.mo Sñr* Manoel Bernardo de Mello e Castro Governor and General Captain of the State of *Para & c.* in the Year of 1761 by the Captain Engineer Gaspar João de Gronfeld").
**AHU (Lisbon).**




32. **Plan of *Vila Nova de Bragança* (Brazil) in 1754.** "Mappa dos rios Guamá, Guajará e Cayté do Estado do Gram Pará aonde mostra-se o Caminho novamente aberto por terra da Vila Nova de Bragança para de Ourém para comodo dos seus moradores, o qual mapa foi feito por ordem do Illmo e Exmo Senhor Francisco Xavier de Mendonça Furtado Governador e Cap. Gen. dos Estados do Pará e Maranhão em o anno de 1754 pelo Engenheiro E.ª Galluzzi". ("Plan of the *Vila Nova de Bragança* and Plan of the *Vila Nova de Ourém* in 'Map of the rivers *Guamá*, *Guajará* and *Cayté* of the *Grão Pará* State where it is shown the inland Way newly opened to *Vila Nova de Bragança* to the *Vila de Ourém* for the commodiousness of its inhabitants, which map was made by demand of the *Illmo* and *Exmo Senhor* Francisco Xavier de Mendonça Furtado Governor and General Captain of the *Pará* and the *Maranhão* States in the year of 1754 by the Engineer E.A. Galluzzi" (Detail).
**AHE (Rio de Janeiro).**




33. Plan of the *Villa Bella do Mato Groço* (Brazil) in 1777. BMP (Porto).

The military engineering was responsible for the pre-eminence of the plain style (*estilo chão)* in the second half of the seventeenth century, which was not completely overcome by the Joanine Italian baroque preferences. The military engineers represented from that period up until the late eighteenth century, simultaneously, a progressive and conservative force. Progressive as they were part of an international movement which, by its immediate military attributions, was forced to keep up with the latest developments in the subject; progressive as by the specific character of their work they had to consider urban space in its conceptual dimension; progressive also as by the particular political and military circumstances of the time they were given a prominent role in society. But they had also a conservative role with regard to formal solutions. As an institutional body directed to the functionality of their works, they transmitted and perpetuated defined formal precepts. In fact, throughout the baroque period, military engineering kept itself true to an approach to architecture which rather than the pre-eminence of the element and its representative character privileged the ensemble and its utilitarian effectiveness. However, this long-established feature was also a progressive factor. In the mid-eighteenth century, the military engineering praxis proved to be very useful for the new town planning ideas. In Portugal, it suited perfectly the enlightened Pombaline project: "The Pombaline city is the eloquent city, the shape that should be fluent and persuasive, which sees itself as demiurgic and able to civilise the people. The architectural typology is also submitted to the urban discourse, which expresses it through the coherence of its ensemble. And Lisbon always comes as an example" (26).

## 3- The Great Earthquake of 1755 and its European repercussions[8]

A major earthquake shook Lisbon in the bright and warm morning of November 1, 1755. The tidal waves and the great fire that followed the earthquake completed the destruction of the city centre (**Illustration 34**).

The first shock was felt approximately at 9.40 a.m. when most of the people were gathered in the city churches attending All Saints' Day mass. The ruin of these large stone buildings was responsible for the killing of a great number of people. At 10 a.m. and noon two other shocks were felt reducing most of the city to ruins. The vast number of candles burning at the time in churches and house chapels were the main cause of the violent fire that followed the earthquake.

Lisbon burnt for a whole week. The fire was kept active by strong winds, which blew for several days, rendering almost impossible the rescue of the people and the salvage of the goods trapped in the ruins (**Illustration 35**). This fire was even more devastating than the earthquake itself. At the time,

[8] Notes p. 135

**34. Lisbon before and during the earthquake of 1755**. Includes Seutter's representation of Lisbon and a picture of Lisbon being devastated by the earthquake and the fire. At the top, there is an inscription written in Latin and German: "Lisabon Magnificentissima Regia Sedes Portugalliae et Florentissimum Emporium ad Hostia Tagi Situm oeri incisum per Math Seutter S. Caes. Et Reg. Cathol. Maj. Geogr. Aug. Vindel". At the bottom: "Anjezo em Verlag bey Tobais Conrad Lotter Geogr. In Augsburg".
Engraving.
Dimensions: 570x490 mm.
**MC (Lisbon).**

35. **Rescue of a little girl from Lisbon's ruins. *Ex voto* to *Nossa Senhora da Estrela*.** Inscription: "A n.sa S.ª da Estrella/voto,q no terremoto de 1755 fes/Leonardo Rodrigues; porq fal:/tando-lhe huma filha de 3 añ invocando a d.ª S. A achou depo:/es de 7 horas nas ruinas das su:/as cazas cõ huma perigoza/ferida na cabeça, q attribue a sua/vida à intercessão da Soberana Senhora". ("To Our Lady of *Estrela*, vow (promise) made at the time of the earthquake of 1755 by Leonardo Rodrigues as, after begging to the mentioned Lady, he found his missing child alive with a dangerous wound in her head, after 7p.m.,which was only possible through the intercession of the Sovereign Lady").
Oil on canvas.
Author: unknown. 18th century.
Dimensions: 480x697 mm.
**MC (Lisbon).**

some estimates indicated that in Lisbon alone between 30,000 and 70,000 people died. The first attempts to calculate the number of victims are in the main not reliable: the destruction of almost all of the city records, the general confusion that took place after the earthquake and the lack of information concerning visitors and other people from out of the city made this task extremely difficult (1). However, some sources, which seem to be more trust worth, reduced the number to approximately 10,000 (2). This latter estimate has been used in recent studies concerning the subject (3). According to the same source, roughly 10% of the buildings were ruined and two thirds suffered such destruction that they were not safe to be lived in. Only twelve of the seventy-two convents of the city were spared and all the hospitals and thirty-three palaces were destroyed. The material loss was huge and the foreign traders lost approximately twelve million sterling pounds, of which, more than half represented British losses (4).

Downtown Lisbon, the large valley extending between the two main city squares: *Terreiro do Paço* and *Rossio*, suffered the most. *S. Paulo*, the area to the west alongside the river was also damaged. There the tidal waves, which followed the first shocks, were a powerful force of destruction. The hill to the west up to the gates of *Santa Catarina*, the *Chiado* area, where the large convent of *S.Francisco* was located, was also badly damaged. The eastern area of the city, the oldest part of Lisbon, resisted diversely to the earthquake, the area near the Tagus and the Castle Hill being the most damaged; whilst Alfama, the medieval neighbourhood to the East of the *Cerca Moura* (Moorish Walls) seems to have resisted the earthquake shocks better. The vast survey of the destroyed city, ordered by the Prime Minister, the future Marquis of Pombal, is the best document of the extensive ruin done to the city. It is a thorough measurement of the city centre properties, displaying also information about the extension and type of damage suffered by each one, the layout and name of all of the streets, alleys and squares of the areas destroyed by the earthquake. This vast survey, known as the *Tombo da Cidade de Lisboa* (Survey of the City of Lisbon) is kept in the National Archives (*Torre do Tombo*) in Lisbon. There is a concise copy of this survey, made in the nineteenth century, which is kept in the National Library in Lisbon (*Biblioteca Nacional*). The book by Joaquim Moreira de Mendonça is also a valuable source of information (5). In 1909, the engineer Luís Pereira de Sousa published a detailed study of the effects of the earthquake on the built structure of Lisbon: using the Mercalli scale as the basis of his own measuring system, he mapped Lisbon according to the different levels of destruction (6).

The *Terreiro do Paço* was completely destroyed vanishing in the flames of the Royal Palace and of all of the other important adjacent buildings: the Cathedral (*Patriarcal*), the Opera House, the Custom House, the City Hall and the Tribunal. The Quay (*Cais das Pedras*) near the Royal Palace was engulfed by the tidal waves, killing approximately a hundred people who were seeking refuge from the fire. The *Rossio* also suffered severe destruction as happened to the whole area between the two main squares. All the waterfront

districts were also ruined and the effects of the earthquake reached most of the nearby areas from the Castle Hill to the west of *Bairro Alto*. The earthquake and, particularly the fire that followed, consumed not only part of the city and its inhabitants but also truncated its history as it destroyed city records, monuments and other noble buildings, magnificent libraries and artistic and scientific collections: "The palace of the Marquês of Louriçal stood well clear to the north of the main area of the fire; but the rich contents of his home, all destroyed, show the kind of thing this loss of property meant: 200 pictures, including works by Titian, Correggio and Rubens, a library of 18,000 printed books, 1,000 manuscripts, including a history written by the Emperor Charles V in his own hand, a herbal formerly belonging to King Matthias Hunyadi (1440-90) of Hungary, a huge family archive, and a great collection of maps and charts relating to the Portuguese voyages of discovery and colonization in the East and in the New World" (7).

Abraham Castres, the British special Envoy to the King of Portugal, survived the catastrophe and wrote the following account: "You will, in all likelihood, have heard before this of the inexpressible calamity befallen the whole maritime coast and in particular this opulent city, now reduced to a heap of rubbish and ruins, by a tremendous earthquake on the 1st of this month, followed by a conflagration, which has done ten times more mischief than the earthquake itself. I gave a short account of our misfortune to Sir *Benjamin Keene*, by a *Spaniard*, who promised, as all intercourse by post was at a stand, to carry my letter, as far as *Badajoz*, and see it safe put into the post-house. It was merely to acquaint his excellency, that, God be praised, my house stood out the shocks, tho' greatly damaged; and that happening to be out of the reach of the flames, several of my friends, burnt out of their houses, had taken refuge with me, where I have accommodated them, as well as I could, under tents in my large garden" (8).

The first news of the earthquake in Lisbon were confusing and, sometimes, contradictory. The *Caledonian* Mercury reports an earthquake in Madrid in its edition of November 27, 1755 and publishes soon after (December 2) some letters written just after the earthquake stating that the news of the earthquake was only a French fabrication: "These letters further add, that the whole Story was invented at Paris, to disconcert the London Merchants, and that by this time it is looked upon there as a Piece of French Finesse" (9). By this time the first reliable news of the earthquake in Lisbon had already reached British soil. Sir Benjamin Keene (British diplomat, b. 1697 – d. 1757), at the time at the Court of Madrid, received the first news of the catastrophe. Keene wrote then to his friend Sir T. Robinson in London. According to Sir Richard Lodge, this letter, dated from November 10, 1755, first informed England of the terrible events in Lisbon (10).

Keene's letter seems in fact to be the source of the news published by *The London Gazette* on November 29, 1755. It refers to a letter dating from November 10 which reveals information issued by the Spanish Embassy at

Lisbon: "On the 8th Instant, a Messenger dispatched by the Secretary of the Spanish Embassy at Lisbon, with Letters of the 4th Instant, brought an Account of the terrible Effects of the Earthquake which happened there, on the 1st, (the same day we felt it here, but without any considerable Damage) between the Hours of Nine and Ten, and which in five Minutes, destroyed the Palace, Churches, and most of the stately buildings; and that the Flames were still destroying the Remains of the City, from one extremity of it to the other, when the Courier came away". The *Caledonian Mercury* also published this same news (11). According to the *Scots Magazine*: "No accounts of the earthquake at Lisbon arrived at London till the 24th. By these people's hopes and fears were greatly affected; we shall therefore give them without interruption" (12). The *Gentleman's Magazine* issued the following news dating from November 29, 1755: "A confirmation has been received of a most dreadful earthquake at *Lisbon* on the Ist inst. at 9 in the morning that continued about eight hours, by which the greatest part of the publick edifices and houses of that superb capital were destroyed, and upwards of 100,000 persons were buried in the ruins: To add to the horror of this scene, the remains of the city was set on fire, in several places, ... and continued burning from one extremity to the other, at the departure of the couriers to the cours of *France* and *Spain*" (13).

These first reports of the earthquake in Lisbon were followed by several descriptions of the event, which were published up until April 1756. These accounts were mainly British letters sent to England. In fact, the British accounts of the earthquake, materialised in the many letters addressed to their families in Britain, are the source of some of the most important and picturesque testimonies of the occurrence. They are particularly interesting as they give us a rich and diversified picture not only of the event but also of the city that disappeared on that day. Despite some occasional and understandable confusion with regard to street names, significance and function of some city areas and overstated estimates of the general human and material loss, these accounts are always very lively and therefore they represent an extraordinary source of information. From all of them we choose to quote an extract of a letter sent by a British merchant to his brother in London: "On *Saturday* the 1st instant, about half an hour past 9 o' clock, I was retired to my room after breakfast, when I perceived the house begin to shake, but did not apprehend the cause, but as I saw the neighbours about me all running down stairs, I also made the best of my way, and by the time I had crossed the street, and got under the piazzas of some low houses, it was darker than the darkest night I ever saw, and continued so for about a minute, occasioned by the clouds of dust from the falling of houses on all sides. After it cleared up, I ran into a large square adjoining [the *Terreiro do Paço*], the palace to the west, the street I lived in to the north, the river to the south, and the custom house and warehouses to the east. But this dismal earthquake had such an influence upon the sea and river, that the water rose, in about ten minutes, several yards perpendicular; in that time I ran up into my room, got my hat and wig, and cloak, locked up the doors, and returned; but being alarmed with a cry that the sea was coming in, all people crowded forward to run to the hills, I among the rest, with Mr. *Wood* and family. We went near two

miles through the streets, climbing over ruins of churches, houses, &c., stepping over hundreds of dead and dying people, killed by the falling of buildings; carriages, chaises and mules, lying all crushed to pieces ..." (14).

Eighteenth century Europe was discovering the powerful unifying force of information: newspapers offered to the Europeans the opportunity to directly follow what was happening all over the world. The earthquake of Lisbon was perhaps the first event to become major news. In Britain, Lisbon was suddenly catapulted to the first pages of the newspapers: its history, its location and chief urban features were the subject of extensive reports. According to Cheke, during the first few weeks after the catastrophe more than twenty accounts of the earthquake in Lisbon were published in London (15). At the time, Lisbon was mostly known for its active role in the maritime trade network, its colonial riches and the extreme religious character of its society: "But Lisbon itself was justly famous for its wealth, and because of its commercial activity it was one of the best-known cities in the world. (...) Wealth, the Inquisition, and the worship of images: to an appreciably large section of the outside world Lisbon was famous for these three things" (16). The *Scots Magazine* pictured Lisbon as following: "Lisbon, one of the richest and best situated cities in the world, contained, with its environs, about 500,000 inhabitants, till the fatal 1st of November ..." (17). In his text regarding the earthquake in Lisbon, Ponce-Dénis Écouchard le Brun wrote: "Lisbon was full of pride; but now Lisbon, Queen of the seas, is not anymore ..." (18).

The effect of the calamity on European commerce was a fundamental element of concern for all involved. The most enterprising commercial nations felt the Lisbon earthquake as a very close disaster: "This dreadful calamity befallen this city, next to the miserable inhabitants, the Brasilians and the English may probably be the greatest sufferers; next to them, the Genovese, and merchants of Leghorn, who supplied this city and the Brasils, with silks, velvets, &c. The French, Dutch, Hamburghers, and indeed most commercial nations, were concerned in the trade here, and must needs be affected by a calamity which extends itself to all Europe" (19).

Apart from the written accounts of the event, a considerable number of views and plans of Lisbon was printed trying to portray the city before the destruction and the earthquake itself. Despite the fantasist character of most of these images, especially with regard to the pictures of the earthquake, they represent another interesting element of its impact on eighteenth century thought (20) (**Illustrations 36, 37, 38 and 39**).

Lisbon is situated on a seismic area and had suffered before the devastating effects of earthquakes. There are some accounts of other strong seismic episodes in the thirteen and fifteen hundreds. However, none had the impact of the earthquake of 1755. Based on the works of Robert Mallet and Perry Byerly, Charles Davison displays a list of the most damaging earthquakes


36. N. 2 *Igreja de S. Paulo.* St. Paul's Church


37. N. 3. *Basilica de Santa Maria.* The Old Cathedral.


**38. N. 4. *Casa da Opera*. Opera House (adjacent to the Royal Palace; inaugurated April 1755).** Architect: Giovanni Carlo Bibiena (b. 1728 – d. 1787).


**39. N. 6. *Praça da Patriarchal*. New Cathedral Square.**

**Captions of illustrations 36, 37, 38 and 39**

**"Collecção de algumas ruínas de Lisboa causadas pelo Terremoto e pelo fogo do primeiro de Novemb.ro de 1775" ("Collection of some of Lisbon's ruins caused by the Earthquake and by the fire of the first of November 1755").** Four engravings, of a total of six, representing some important monuments of Lisbon ruined by the earthquake. With inscriptions in Portuguese and French: "Debuxadas na mesma cidade por M.M. Paris et Pedegache/E abertas ao boril em Paris por Jac. Ph. Le Bas" ("Drawn in the mentioned city by M.M. Paris and Pedegache/And opened with a burin in Paris by Jac. Ph. Le Bas"). Several copies were made of these engravings. Here we have a display of some with English and Flemish inscriptions.
Dimensions: 265x355 and 285x365.
**MC (Lisbon).**

known to have struck Lisbon before 1755 (21). According to this list, from 1009 to 1750 there were fourteen earthquake shocks worth mention. Of special notice was the earthquake of January 26, 1531, which, following the same sources, ruined approximately 1500 houses and all of the churches in the city and was accompanied by the rising of the Tagus' waters. There are, in fact, some accounts of this earthquake, which seems to have been the most destructive to take place before the earthquake of 1755 (22).

The area directly struck by the earthquake of 1755 was very extensive: "The first great shock was felt over an area of between 1,200,000 and 1,400,000 sq. miles" (23). The earthquake was felt across Portugal and Spain, especially in the south and in the north of Africa. Apart from some cities in the south of Portugal, namely Setúbal and Évora, some areas in the south of Spain and in the north of Africa were also considerably affected: Seville, Cordoba, Granada, Cadiz, Algiers, and Mequinez (24). This could only have happened if we were in presence of more than one earthquake: "Over this vast area, there was no gradual decline in the intensity of the shock from some central point. There seems rather to have been a succession of earthquakes, in what order they occurred we cannot now say, the principal earthquake no doubt in the Lisbon centre, another of less but still great strength near Mequinez, and perhaps a third near Algiers" (25). According to the same author, all these seismic centres are independent and had since their own specific seismic history. More difficult to establish is the link between these shocks and similar disturbances felt at the time all over Europe. Several seismic phenomena were reported in different areas of Europe when the earthquake took place in Lisbon and during the following days (26). The London Gazette, when firstly noticing the earthquake in Lisbon, states the following: "... the terrible effects of the Earthquake which happened there, on the 1$^{st}$, (the same Day we felt it here, but without any considerable damage)..." (27). According to Davison, it is today very difficult to establish the accuracy of all of these accounts: their connection with the Lisbon earthquake does not seem credible. However, other phenomena were reported at the time: the unusual rising of waters in lakes and rivers across Europe (28).

All these related incidents gave to the earthquake of 1755 not only an important scientific dimension but also added to its sensationalist impact, which was well documented at the time. The intensity of the earthquake shocked European public opinion. The first reports were often inaccurate and understandably fantasist: "To add to the horror of this scene, the remains of the city was set on fire, in several places, by flames which issued from the bowels of the earth, and continued burning from one extremity to the other, at the departure of the couriers to the cours of *France* and *Spain*" (29).

An array of philosophical and literary texts was published all across Europe aiming to find an explanation for the event. Most of them had a religious character: "Of all divine Visitations, this is the most terrible Vindictive. The

Whirlwind is flow in its Progress; War is gentle in its Assaults; even the raging Pestilence is a mild Rebuke, compared with the inevitable, the all-overwhelming Fury of an Earthquake. When it begins it also makes an End; puts a Period in a few Minutes to the Work of Ages; ruins all, without Distinction; and there is no Defence from its destructive Stroke" (30). Superstition had a prominent role in the extensive religious reaction to the event. In Portugal, on the very day of the earthquake, priests and monks were walking around the ruined city exhorting people to confess their sins in order to pacify God's assumed anger against Lisbon. These individuals increased the hysterical mood of the earthquake's suffering survivors.

Most of these texts pointed out the alleged sinful life of Lisbon's population as the cause of the catastrophe. According to these publications, the earthquake was a sign of God's rage against the freethinkers and atheists living in the Portuguese capital city. Obviously, the British and other Protestant foreigners were targeted in these texts. It was, exactly, this atmosphere of religious hate and persecution that Pombal wanted to avoid. All over Europe texts were issued following this type of argumentation. In Britain some were published naming, in turn, the non-Christians and the Catholic and Inquisitorial Portuguese church as the cause of God's supposed wrath: "Surely so extensive a signal from the king of heaven, and so wide-wasting a devastation amongst our unhappy neighbours, and so levelling a stroke in the ranks of mankind, on the *European Idolaters* and the *false prophets* too on the coast of *Africa*, makes this affair so very remarkable (...) that I would charitably hope it could not fail to work is due and proper effect on the minds of all the *reformed* part, at least, of the Christian world ..." (31).

The earthquake also occupied Enlightened European minds. There was the search for a scientific explanation for the catastrophe. Pombal supported this approach, not only as a means to calm down a terrified population, but also as statement of his own ideas and attitude. He sent a questionnaire to each parish in Portugal aiming for an overall estimate of the human losses and property damage throughout the country and for the register of specific information relating to the earthquake: "In addition to its great strength and its varied phenomena, the Lisbon earthquake is remarkable as the first to be investigated on modern scientific lines. By order of the Marquez of Pombal, a list of questions was sent to every parish in the country. If it had been drawn up at the present day, it could hardly have been more complete. The questions refer to the time at which the earthquake began and the duration of the shock, its direction, the effects of the earthquake on the sea, on springs and rivers, the height of the seawaves and the time for which they lasted, fissures in the ground, and even the times and intensities of the after-shocks" (32). The Prime Minister's attitude conforms to the pragmatic actions undertaken just after the earthquake and the promptitude with which they were taken: the punishment of thieves and other criminals, the installation of tents and other facilities for the homeless, the fixation of prices for essential goods and the redirection of the fugitive citizens to the city (33).

A few cultured Portuguese tried, thus, to see the earthquake through the enlightened point of view of science. Amongst them we name the Doctor José Alvares da Silva (34), the military Miguel Tibério Pedegache Brandão Ivo (35), the brothers Veríssimo António Moreira de Mendonça and Joaquim Moreira de Mendonça, author of an important book regarding the subject of earthquakes (36) and the *estrangeirado* António Nunes Ribeiro Sanches (37). Their approaches may differ but all of them had in common the search for an explanation based on natural causes rather than on superstitious beliefs.

Kendrick points out the attention that the Portuguese authorities gave to medical issues: "They dreaded the outbreak of a plague, a calamity well-known to Lisbon, and their frantic concern about getting rid of the corpses and restoring some sort of drainage system was a sensible expression of this fear. The medical men available in Lisbon were no doubt far too few in numbers and were not properly trained to deal with this emergency; but they did their best and understood the danger that threatened the city" (38). Not only in Portugal, but all over Europe, the earthquake of 1755 stimulated a scientific research of seismic phenomena: "...an important series of papers or letters was read before the Royal Society [in London], and a number of accounts written by residents in Lisbon and elsewhere were published in the *Gentleman's Magazine* and others. Many of these notices were collected by John Bevis in 'The History and Philosophy of Earthquakes', a series of memoirs edited by him in 1757: the last chapter of this work is entitled 'Phaenomena of the great earthquake of November I, 1755, in various parts of the globe" (39). Immanuel Kant (b. 1724 – d. 1804) also wrote a small pamphlet on the causes of earthquakes, mentioning in particular the earthquake of Lisbon:

"The first observation to be immediately made is that the ground above which we live has to be hollow and that the vaults that form it are linked together, even beneath the sea. (...) For example, Lisbon and Iceland, which are distanced more than four hundred and a half German miles, suffered an earthquake on the same day. (...) the ruins of Lisbon should remind us that no building should be erected along the Tagus, as the river points in the direction that, naturally, the earthquakes will follow in this country" (40).

The fact that such a wealthy and populated city of the *civilised world* could be destroyed within two hours without possibility of defence made the optimistic enlightened Europe shiver. Enlightenment reacted to this event with shock but also promptly tried to find some comforting answers: its scientific causes, as already mentioned above, and solutions to minimize its impact on urban structures. Apart from all of the efforts of the Portuguese military engineers in conceiving an architectural structure able to resist the destructive effect of seismic forces, some texts published at the time reveal this concern: e. g., Ribeiro Sanches work *Consideraçoins sobre os Terremotos, com a noticia dos mais consideraveis, de que faz mençaõ a Historia, e dos ultimos que se sintiraô na Europa desde o 1 de Novembro 1755* (41) and a letter published in the *Gentleman's Magazine* by a reader giving advice on the subject:

"1st. Let the new city be built upon as even ground as possible, and the seven hills, mentioned in a late description, ...left free from all kinds of buildings, and entirely open, as to many areas, instead of those squares, which the people ran to, as the street from danger; because they will not only secure the fugitives from falling houses, but from the overflowing of the water upon the swell of the sea.
2dly, Let the houses be built low and broad, for it is evident, that a low and broad house will bear more shaking than a high one, and that the centre of gravity will be longer preserved within the walls.
3dly, Let the streets be three times as wide as the houses are high; that supposing the houses to be thrown down on both sides, the materials of which they are built may not meet in the middle of the street.
4thly, Let the roofs be flat, and the diminishings of the walls in the different stories all on the outside, that they may be perpendicular within from top to bottom" (42).

The earthquake of 1755 also contributed to the change of perspective with regard to *Optimism*, which characterized late eighteenth century thought. The enlightened formula "All's for the best in the best of all possible worlds" was suddenly shaken by Nature's potential of destruction and Man's fragility in these circumstances. Voltaire (b. 1694 – d.1778) produced two important texts with regard to this subject: *Poème sur le désastre de Lisbonne ou examen de cet axiome: tout est bien* (1756) and *Candide ou l'Optimisme* (1758). Both works reveal the extent of the effect of this catastrophe on Voltaire's thought:

"Unhappy mortals! Dark and mourning earth!
Affrighted gathering of human Kind!
Eternal lingering of useless pain!
Come, ye philosophers, who cry, 'All's well',
And contemplate this ruin of a world" (43).

To Voltaire, Lisbon's devastation was the evidence that enlightened optimism, as presented by Alexander Pope (b. 1688 – d. 1744), could no longer serve its intent. He used the events in Lisbon to support his ideas with regard to Nature's imperfections, stating that evil, as a fundamental part of it, would sometimes prevail: "The author of the poem on *The Disaster of Lisbon* is not an adversary of the illustrious Pope, whom he has always admired and loved: he thinks like him on practically all matters; but, pierced to the heart by the misfortunes of mankind, he wishes to attack the abuse that can be made of that ancient axiom 'All is for the best'. He adopts in its place that sad and more ancient truth, recognised by all men, that 'There is evil upon the earth'; he declares that the phrase 'All is for the best', taken in a strict sense and without hope of a future life, is merely an insult to the miseries of our existence" (44). In *Candide ou L'Optimisme*, Voltaire voices his disbelief in enlightened optimism through Candide's reactions to his misfortunes. After being struck by the earthquake in Lisbon, Candide exclaims - "Si c'est ici le

meilleur des mondes possibles, que sont donc les autres?" ("If this is the best of all possible worlds, what are then the others?)" (45).

The earthquake of 1755 represented an important argument for the detractors of Pope's optimistic vision of the world. Voltaire's works were not the sole early attacks on enlightened Optimism. Samuel Johnson (b. 1709 – d. 1784) published in 1757 "A Review of Soame Jenyns's: *A Free Inquiry into the Nature and Origin of Evil*", supporting the same perspective with regard to the enlightened concept of perfection. Johnson writes: "Life must be seen before it can be known. This author [Soame Jenyns, b.1704 – d.1787] and Pope perhaps never saw the miseries which they imagine thus easy to be borne" (46). Rousseau (b. 1712 – d. 1778), on the other hand, remained faithful to Pope's theory. He criticised Voltaire's poem in a letter written on August 18, 1756: "Do not be deceived, Sir. For quite the opposite has occurred. The optimism which you find so cruel, nevertheless consoles me in the very suffering that you depict for me as insupportable. Pope's poem softens the pain and leads me to patiente. Your poem aggravates my suffering and incites me to complain and, by taking away everything – outside of shattered hope - reduces me to despair" (47). Lisbon's catastrophe took place at a crucial moment for eighteenth–century thought as it shook the confidence in some of the soundest postulates of the enlightenment. The controversy with regard to the pursuit of perfection and happiness, which was inevitable, gained with the events in Lisbon a more genuine dimension: "After the earthquake pessimism became a more familiar and understandable mood, while the undefeatably hopeful minds occupied themselves more and more with the idea of perfectibility, a gradual progress by man under God's providence towards a full happiness and perfection. In effecting this change, the influence of *Candide* played a significant part (...)" (48).

A strong web of solidarity was established between Portugal and its European counterparts. From Spain, France, Great Britain and the German States help was sent in the shape of currency, food, building supplies, human expertise and labour force. Benjamin Keene informs Castres in a letter sent from Madrid on November 10, 1755: "Their Catholic Majesties have been affected with this news as souls like [theirs] should be affected in such terrible calamities. They send as much ready money every day as a messenger can carry, and the King's letter to his sister offers all *her* King can ask and he can send. The douanes are open on the frontiers for all necessaries to pass free without duties, and the administrator general for the customs at Badajoz will send you whatever you write for" (49). The *London Gazette* reports that from Hamburg and Danzig building materials were sent for the rebuilding of Lisbon: "*Dantzick, March 10* - Within these few Days part, a great Quantity of Timber, for building Houses, &c. has been shipped off from this Port to Lisbon" (50). The same newspaper informs that on March 30 arrived in Lisbon "The two ships from Dublin, which have been so long detained by contrary Winds ... and have brought the Remainder of the whole Quantity of Provisions for the Court of Portugal, which were expected from Ireland" (51).

British aid was swift and very significant: it included apart from food and money, the sending of artisans and builders (52). The message sent from the British king to the House of Commons, on November 28, regarding the earthquake in Lisbon was soon published in the British newspapers: "His Majesty having received, from his ambassador at Madrid, ascertain account of the fatal and deplorable event ...and his Majesty, being moved with the greatest concern for so good and faithful an ally the King of Portugal, ... recommends his faithful Commons the consideration of this dreadful and extensive calamity...; and desires to be enabled by the house of Commons to send such speedy and effectual relief, as may be suitable to so afflicting and pressing exigency" (53). The Portuguese king expressed his sincere gratitude for the British prompt aid but offered it first to the British citizens residing in Lisbon. The British newspapers reported the occurrence: "Lisbon, Feb. 11. Five of the Irish transports are arrived. Dispositions are making for the distribution of the beef and butter among the poor, but this court has insisted upon the English subjects being first served" (54).

Several earthquake shocks were felt in Lisbon and Portugal on the days following the catastrophe; this was as well extensively reported in the British newspapers. The population fled the ruined city and established themselves on the other bank of the river and in the outskirts of the city. Pombal and his office promptly set up a plan of action in order to stop the chaos in Lisbon after the earthquake. In Pombal's alleged words: it was time "to bury the dead and care for the living". Obviously, the first aim was to renew the confidence of the citizens in their city, in order to restart its regular activities and proceed swiftly to the rebuilding. Therefore, it was vital to reinstall civic order in the city. To this end, Pombal's first task was the severe punishment of all the thieves and other outlaws operating in the deserted city. Again, these events were news all over Europe. The *Gentleman's Magazine* published the following report: "*Lisbon, Nov. 20.* Several villains have been apprehended and executed, mostly foreigners, and to our reproach, among other nations, some *English* sailors, for robbing and plundering the palace and king's chapel of a great deal of rich plate. The others were *French* and *Spanish* deserters, and some from the common prisons, which, in the general havock, let forth their contents in common with other edifices" (55). Pombal wanted to re-establish as soon as possible the normal city activities in order to prevent a further social and economic disaster.

At the beginning of the New Year, the first steps were taken in order to start an efficient and controlled process of rebuilding: the survey of the ruined city was decided, the first legislation with regard to the reconstruction was issued and a strong team of military engineers began to consider a plan for the new city. If the process of creating the technical and legal basis for the rebuilding was expeditious, the reconstruction itself, as we shall see in the next chapter, was somewhat slow. Also, in the years after the catastrophe, the fear of a new earthquake led the population, following the example of the royal family, to prefer to live in wooden buildings. However, Pombal's first purpose was achieved: the quick reanimation of Lisbon's economic activities following a

clear and determined project of reconstruction on the same site. The first resolutions with regard to this matter were also news at the time: "*Lisbon, Jan.* 25. The King and Royal Family are still obliged to reside in Tents, notwithstanding the Severity of the Weather, as do most of the Inhabitants; but his Majesty has declared his Intention of having the City rebuilt on the same Spot it stood before our late Misfortune, and the same will be begun in the Spring, ..." (56). Although these reports did not have the same sensationalist impact of the earthquake accounts, they certainly should have been of interest to the European cultured society. However, apart from some interest in the prevention of the effects of earthquakes on architectural structures and Robert Adam's sketches for the new Lisbon, the rebuilding of Lisbon did not deserve the same widespread attention as the catastrophe itself. The foreign accounts of Lisbon after 1755 represented probably the only source of information (57).

Robert Adam (b. 1728 – d. 1792) was only a promising young Scottish architect, travelling in Italy, when the Earthquake struck Lisbon in 1755 (he was in Rome, at the time). The impact of the news and the auspicious opportunity of creating a newly planned city, made Robert Adam fantasize about the possibility of performing such a task: "And now let me descant a little on my private incitements to a scheme which is a thousand chances to one never will take place. The being called by a Prince as the prosperest person in the universe to build a whole city is no unflattering idea, but still more so when one considers the éclat, the elevated appearance and the fortune that may be made in a few years by it (...)" (58).

Robert Adam was immediately aware of the magnitude and importance of the rebuilding enterprise in Lisbon. His interest in the matter went beyond the mere dream. In April 1756, when the first news regarding the plans for Lisbon reached Europe, Robert Adam made some efforts in order to be appointed as the architect of the new city: "The report spreading of my being candidate for an affair of that consequence would be of infinite service to me even though I should be too late of applying and not chosen to put it in practice" (59). Adam's enthusiasm about this enterprise balanced between hope and true commitment. He even considered with some detail and confidence the advantages of being in such position and the possibility of having his family in Lisbon with him: "I should, if things succeeded, be made noble by the King and have money to support the dignity of it without competition or rival and after a few years spent in an honourable way, in a fine climate and where reside many of our countrymen, return to England with all these honours on my head (...). I don't suppose any of you would object to passing the seas and finishing my happiness by my having you all about me? Jamie could never think of a better school than where Clérisseau dwells, so that stinking Lisbon would just succeed stinking Edinburgh" (60).

In his letter, Adam reveals some knowledge about the importance of Lisbon in eighteenth century Europe: he shared the illusory European belief that

pictured the Portuguese king D.José – "as the properest person in the universe"; he was informed of the importance of Lisbon in the British trade network – "where reside many of our countrymen". Also, he seems to be aware of Lisbon's most caricatured image: "the stinking Lisbon", as this city was pictured by the many foreign accounts written from the seventeenth century. It is interesting to note that in this judgement, Robert Adam traces a parallel with Edinburgh, revealing thus his own opinions with regard to the deficiencies of his hometown.

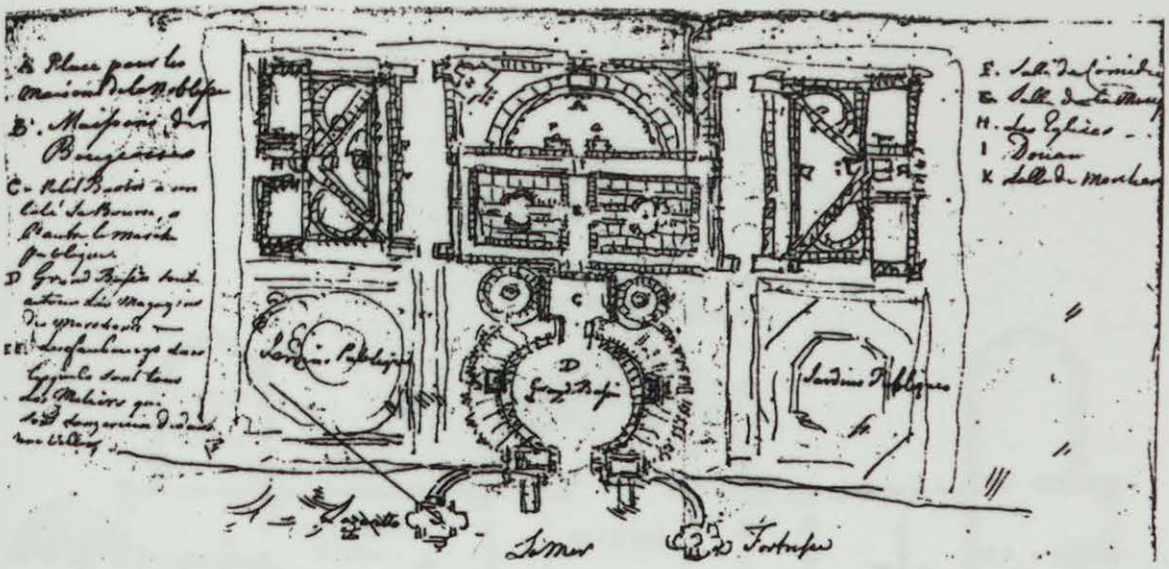
However, Adam's comment on Clérisseau is, probably, his most interesting remark: "Jamie could never think of a better school than where Clérisseau dwells". Adam is certainly referring to the great advantages of learning through an architectural project of such a dimension, pointing out, at the same time, Clérisseau's own work and field of action. In fact, James and Robert Adam relationship with Charles-Louis Clérisseau (b. 1721 – d. 1820) marked the brothers' aesthetical preferences throughout their respective tours. Their friendship and Clérisseau connections, e.g. with Piranesi (b.1720 – d. 1778), influenced decisively the works that both brothers carried out at the time (61). Robert and James Adam (b. 1732 – d.1794) were making their *début* in an architectural environment, which privileged the Monumental and this journey was made by the hand of Clérisseau. In an enthusiastic letter to his brother James (October 19, 1755), calling him to come to work in Italy, Robert Adam wrote the following: "To stay a couple of twelvemonths in Rome without a proper conductor who can point out the proper method of studying and, in a manner, by seeing his progress and works can inspire one with a taste and love for the Grand, you will spend much time in Rome to little purpose. Without Clérisseau I should have spent several years without making the progress I have done in one quarter of the time. The reason's evident. The Italians have at present no manner of taste, all they do being more French than anything else" (62). This last sentence is extremely revealing of Adam's recent stylistic preferences: the emergent neo-classical proposals, which the French architects so passionately developed at the time.

Robert Adam's letters to his family in Edinburgh portray a very confident individual who was clearly struck by the emergent fascination for Antiquity expressed in the various Romantic views of ancient monuments and cities. Piranesi extensive work on the subject was undoubtedly an influential element of Robert Adam's education in Italy. Despite Robert Adam's critical and, somehow, arrogant remarks, Piranesi "views of Rome" were, certainly, a valuable material of work for the Scottish architect: "I believe jealousy may now prevent his [Piranesi] doing what may be to my honour and advantage, for he sees I am doing things that interfere with his province, viz. making drawing of the antique Baths & ca here, to much better purpose than he is capable of, (...)" (63). If Clérisseau was the teacher, Piranesi was clearly the mentor: "For 1755 had been a halcyon year-a climateric in his life, both socially and artistically. (...) his newly acquired *Taste and Love for the* Grand, inspired by Piranesi and now being developed and refined under the guidance of Clérisseau, had as yet borne little fruit except the realisation of

his own ignorance and the distance he had still to travel (...)" (64). *This newly acquired taste* is well portrayed in the sketches that Robert Adam ventured as the new plan for Lisbon.

These sketches are today kept at the Sir John Soane Museum in London: they represent a plan for a new city (with an explanation in French) and a bird's eye view of the same project (65) (**Illustrations 40 and 41**). The city proposed by Robert Adam is firmly structured on a symmetric and monumental composition following an architectural and spatial approach, which combines baroque and neo-classical elements. The urban space is divided according to specific functions: residential area, religious and political areas, commercial area and leisure area. The residential area is also divided according to a social hierarchy: the Nobility and the Bourgeoisie quarters. This compartmentalization of space is reinforced by the use of different geometrical shapes (triangle, square, semicircle, circle, quadrant and octagon) and is organised as a spatial movement that extends from the river, which is connected to the city by a *Grand Basin*, to the semicircular residential plaza at the end of the city. A hierarchy of architectural forms marks the hierarchy of space: Adam chooses baroque formal elements for the great public square near the river and the nearby public gardens and use the classical contribution of Antiquity for the private royal residential area. Worth of mention is the original use of the triangle in the religious areas at each end of the residential quarter. The highly elaborated geometric design gives to the plan an ultimate utopian character. In fact, Adam's sketches seem more an exercise of architectural shapes than of a town planning program. As such, he disregards vital features of a capital city with the political, social and commercial importance of Lisbon: the royal palace and the State headquarters (66).

Adam's solution for the rebuilding of Lisbon evidences the impact that his tour in Italy was having on his architectural and planning ideas. As Angela Delaforce points out: "In these designs Adam was clearly inspired by the scale and grandeur that was all around him in the Eternal City. There are references to both Antique Roman buildings and to Baroque planning in Rome" (67). Overall, it is an early application of his main ideas with regard to architecture and its relationship with urban space. It, therefore, says more about Robert Adam's architectural taste and preferences than of his real curiosity in Lisbon as a town planning example. In fact, it is possible to trace in Adam's proposal some of the elements that would shape his extensive architectural production: the combination of geometric forms as a structuring and developing expedient and the taste for monumentality. Some of Adam's future architectural designs are suggested in this plan for the new Lisbon, e.g. Luton Hoo in Bedfordshire (1766-70) (**Illustration 42**). The monumental impact of Antiquity's architectural models and the creation of a spatial dynamic through the use of geometric shapes mark Robert Adam's stylistic preferences and structure the architect's approach to the neo-classical movement. In fact, as Summerson emphasizes: "The Neo-classical streak in Adam appears fitfully. The extreme reserve of true Neo-classicism was



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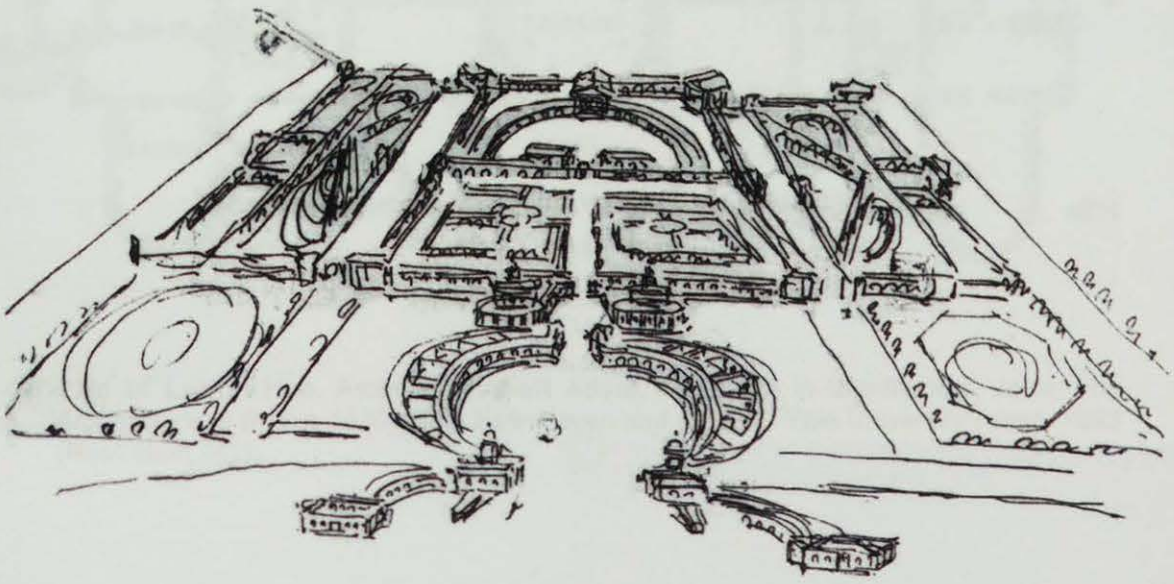
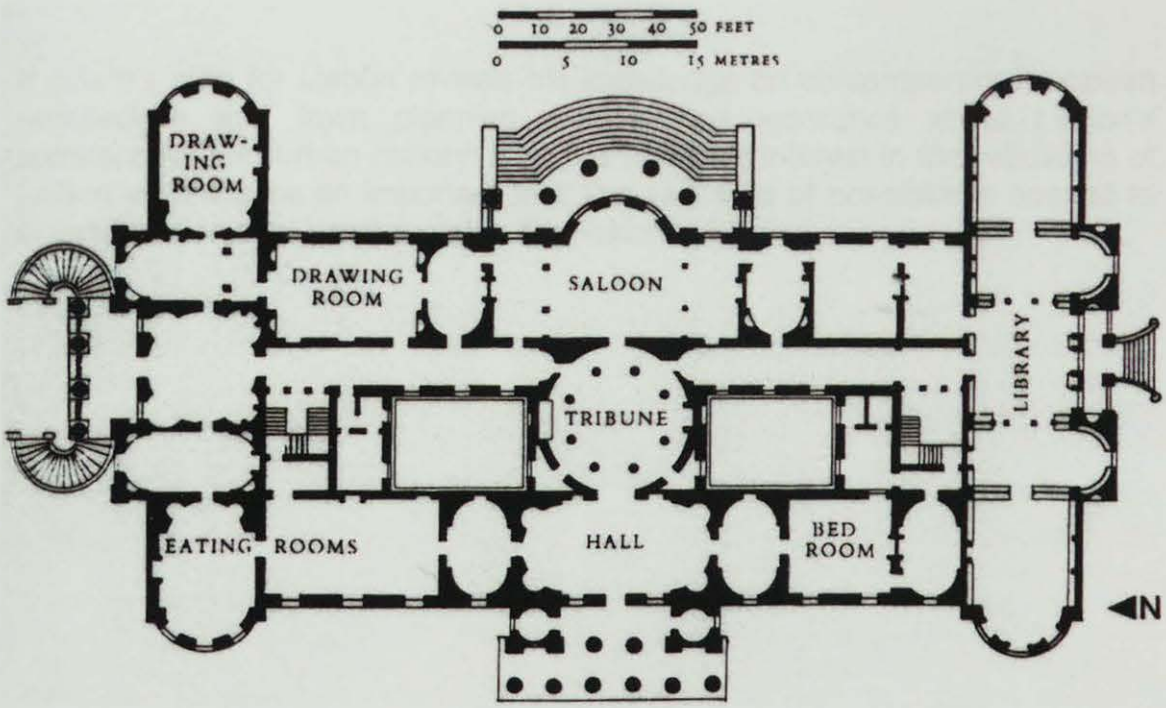


**40 and 41. Robert Adams's sketches for the reconstruction of Lisbon.** Plan and a birds eye view. **John Soane Museum (London).**




**42. Plan of Lutton Hoo.** Architect: **Robert Adam.** Published in Summerson, John, *The Architecture in Britain 1530-1830.* New Haven and London: Yale University Press, 1993 (Illustration 342).

inimical to this theory of movement, and it is only in these occasional gestures [the "Diocletian Wing" at Bowood], where antiquity provided the idea for some columnar episode, that we recognize Adam's affinity with the new school of thought developing on the continent" (68). We recognize all of these attributes in Adam's sketches for Lisbon.

The emergent town planning ideas with regard to both form and function are also present in Adam's sketches, particularly the programmed relationship between spatial unity and urban utility. This aspect deserves a particular mention as it also links Adam's work to the close connection between Neo-classical formal proposals and the enlightened concept of the city.

If Adam's plan for Lisbon reveals his knowledge on contemporary European architecture and town planning, shows also ignorance about Lisbon's architectural and urban history. However, Adam's interest in the rebuilding of Lisbon emphasises an important fact: the vast field of possibilities opened to urban creation by a project of this dimension.

## Notes

## Part II – Lisbon, London and Edinburgh: Three Examples of Urban Planning

1. Estorninho, Carlos, *O Terramoto de Lisboa e a sua repercussão nas Relações Luso-Britânicas* (1956), p.16. Obviously these figures are very elucidative of the disparity between the amount of merchandises being traded in that period by the British and the Portuguese merchants.

## 1. Portugal in a European context

## 1.1 Politics and economy: the Portuguese and British relationship

1. Shillington, V.M. and Chapman, A.B. Wallis, *The Commercial Relations of England and Portugal* (1907), p. viii.

2. Boxer, Charles, "The Anglo-Portuguese Marriage Treaty of 1661" *History Today*, London, vol. 11, n. 8 (August 1961), p. 556.

3. See Harris, John, "The influence of English Palladian Architecture in Portugal in the Eighteenth Century" *Portugal e o Reino Unido, A Aliança Revisitada* (1994), pp. 69-76; Taylor, René, "John Carr e o Hospital de Santo António no Porto", *Revista e Boletim da Academia Nacional de Belas Artes*, 2ª série, 15 (1960), pp. 13-31 and "The Architecture of Port Wine" *The Architectural Review*, vol. 129, 772 (1961), pp. 389-398; Wragg, R.B and Mary, "Carr in Portugal", *The Architectural Review* (Feb. 1959), pp. 127-128.

4. Berkeley, Alice and Lowndes, Susan, *English Art in Portugal* (1994), p. 17. The same can be applied, certainly, to the issue of Portuguese art in Britain as many British traders, diplomats and soldiers took Portuguese works of art to Britain (this is particularly true for the early nineteenth century, when the British campaign against Napoleon's invasion of Portugal took place). Some Portuguese daily habits also influenced British society: The marriage between the princess Catarina de Bragança and king Charles II is known to have brought to the English Court the taste for the afternoon tea and the English orange marmalade appeared in the early nineteenth century as an attempt to replace the Portuguese *marmelada* made with quinces (hence the name, as quince in Portuguese is *marmelo*).

5. See Veiga, Luiz Alte da and Martins, Décio Ruivo, "Aspects of the Scientific Relationship between Portugal and England in the 18th Century" *Portugal e O Reino Unido, A Aliança Revisitada* (1994), pp.63-67.

6. Moreira, Rafael, Preface to Berkeley, Alice and Susan Lowndes, *English Art in Portugal* (1994).

7. See *The Privileges of an Englishman in the Kingdoms and Dominions of Portugal. Contain'd in the Treaty of Peace concluded by Oliver Cromwell; and Various Laws, Decrees, & c. at sundry times, and on divers occasions, Made by the Kings of Portugal, in Favour of the English Nation. Which are Things absolutely necessary to be known, by every Person who is anyways concern'd in the extensive Trade, now carrry'd on between the two kingdoms. To which is added, the King of Portugal's New Law, concerning the Diamonds found in Brasils* (1736).

8. *The Private Correspondence of Sir Benjamin Keene* (1933), pp. xxviii-xxix.

9. Shillington, V.M. and Chapman, A.B. Wallis, *op. cit.*, ix.

10. Smith, Adam, *An Inquiry into the Nature and Causes of the Wealth of the Nations* (1776), Book II, Chapter III. See also Boxer, C.R., *The Portuguese Seaborne Empire 1415-1825* (1969).

11. Hanson, *Economy and Society in Baroque Portugal 1668-1702* (1981), p. VII. This author develops an interesting study regarding the economic program of the Portuguese Crown and gives a thorough picture of the mercantilist thought in Portugal at the time.

12. Hanson, Carl Aaron, *op. cit.*, p. 527.

13. Anderson, Adam, *An Historical and Chronological deduction of the Origin of Commerce*, vol. I (1764), p. IV and p. 325.

14. According to Delaforce, John, *The Factory House in Oporto* (1983), pp.1-2: "The dictionary definitions of a Factory make it plain that the original sense of the word was 'an establishment for traders carrying on business in a foreign country' as well as 'the body of factors in any one place'. The origin of the word is from mediaeval Latin *factoria*, subsequently found in several of the Romantic languages, as the Spanish *factoria*, Italian *fattoria* and of course the Portuguese *feitoria*. There can be little doubt that the English equivalents, 'factory' and 'factor' derived originally from the Portuguese, and A.H. Walford in his *British Factory in Lisbon* published in 1940, is also of the same opinion". This author also states that "the British factories in Europe in some cases established even earlier that those in India [1613 – Surat, the first to be built by the British]", p. 3. The British Factory in Viana do Castelo (city in the north of Portugal), which was established at the turn of the seventeenth century to support the wine traders, was one of these cases, p. 5.

15. Fisher, E.R.S., *The Portugal Trade (A Study of Anglo-Portuguese Commerce 1700-1770)* (1971), p. 19.

16. See Kendrick, T.D., *The Lisbon Earthquake* (1956), p. 54: the author refers to a book written by the French author, Ange Goudar, just after the Lisbon Earthquake of 1755 untitled: *Relation historique du Tremblement de Terre ... précédé d'un Discours politique* which contains a critical analysis of Portugal's political and economic dependence with regard to Britain. See also Fisher, *op. cit.* and Fielding, Henry, *The Journal of a Voyage to Lisbon* (1755). Richard Twiss who visited Portugal between 1772 and 1773 states the following: "Most of these coins [Portuguese coins] are well known in England, all they were there current till very lately" – *Travels through Portugal and Spain, in 1772 and 1773* (1775), p. 25.

17. *The Private Correspondence of Sir Benjamin Keene,* Introduction, p. xxvii.

18. See in this **section: Part II – 1.3 The Pombaline Project**, an interesting analysis of this situation by the Marquis of Pombal.

## 1.2 - Society and culture: the Baroque Period

1. See Carrére, Joseph Barthélemy François, *Tableau de Lisbonne en 1796; Suivi de Lettres Écrites de Portugal sur l'État Ancien et Actuel de le Royaume*. Paris : 1797 (Chaves, Castelo Branco (ed.), *Panorama de Lisboa no ano de 1796* (1989), Introduction, pp. 10-11) and Cardozo, Manuel "The Internationalism of the Portuguese Enlightenment: The Role of the Estrangeirado, c. 1700-1750" *The Ibero-Americain Enlightenment*" (1971).

2. Brockwell, *The Natural and Political History of Portugal...* (1726), pp. 12-13. Quoted in Cardozo, Manuel, *op. cit.*, p. 144.

3. See Dalrymple, Wiiliam, *Travels through Spain and Portugal in 1774, with a short account of the Spanish Expedition against Algiers in 1775* (1777); Costigan, Arthur William, *Sketches of Society and Manners in Portugal in a series of letters* (1787) and Southey, Robert, *Letters Written During a Short Residence in Spain and Portugal* (1797). For a detailed analysis of the

many eighteenth century foreign accounts of Portugal, see Macaulay, Rose, *They went to Portugal* (1946) and *They went to Portugal too* (1990); Chaves, Castelo Branco, *Os livros de viagens em Portugal no século XVIII e a sua projecção europeia* (1972) and Pires, Maria Laura Bettencourt, *Portugal visto pelos Ingleses* (1981).

4. Despite his negative view of the Portuguese, Dumouriez wrote in 1766: "Il n'y a point de Nation que ait d'obligation aux voyagers que la nation portugaise. Tous à l'envi se font plus a la décrier, et l'Europe informée par eux croit tout Portugais un sauvage ou un Béotien. Sa langue peu connue, sa position à l'extremité de l'Europe, le petit nombre de Portugais qui voyagent, la décadence de cet État, tout concourt à empecher que personne se donne la peine de verifier se ce qu'on écrit sur le Portugal est exact" - Dumouriez, *État Présent du Royaume de Portugal* (Hamburg, 1797) Preface to the 1st edition, p. xxvi.

5. Delaforce, Angela, *Art and Patronage in Eighteenth-Century Portugal* (2001), p. 5.

6. Cardozo, Manuel, *Idem.*, p. 141.

7. See Silva Dias, *Portugal e a Cultura Europeia (sécs. XVI a XVIII)* (1953) and Calado, Margarida, *Arte e Sociedade na época de D.João V* (1995).

8. See Murteira, Helena, *Lisboa da Restauração às Luzes* (1999), p. 81 – e.g. to update the city's cleaning system, the city council proposes the sending of a commission to Paris to study the most recent developments in this matter.

9. Cheke, *Dictator of Portugal: A life of the Marquis of Pombal 1699-1782* (1938), p. 4.

10. Cardozo, Manuel, *Ibidem*, pp. 151-152.

11. "Era indispensável ao decoro e à segurança do Reino desenvolver certos ramos das indústrias de luxo e de guerra; à sua potência militar faltavam técnicos especializados na engenharia, na química e na balística; o problema da delimitação definitiva das fronteiras brasileiras exigia um grande rigor cartográfico, acontecendo que a determinação tradicional das longitudes fora posta seriamente em causa pelos cartógrafos europeus mais competentes; as deficiências na preparação escolar dos médicos portugueses tinham-se tornado clamorosas" - Saraiva, António José and Lopes, Óscar, *História da Literatura Portuguesa* (1985), pp. 598-599.

12. See Bottineau, Yves, "Le Goût de Jean V: Art et Gouvernment" *Bracara Augusta* off print (27) (Braga, 1974) and Calado, Margarida, *op. cit.*

13. Cardozo, Manuel, *Ibidem*, p. 153.

14. In 1720, King D. João V founded the Royal Academy of History (*Academia Real de História*) in a clear attempt to justify, by the study and compilation of the kingdom's history, Portugal's claims to a prominent place in the European scene. Despite the restrictions imposed by a method submitting the secular to the religious, this institution was responsible for a major effort of historical work and collection; initiating a trend which continued throughout the century, the Crown sent in 1729 two Jesuit priests to Brazil with the task to develop a geographical and topographical extensive study of the colony, which was the first of the kind to be subsidized by a European state. See Andrade, António Alberto de *Vernei e a cultura do seu tempo* (Coimbra, 1965), p. 80; Cardozo, Manuel, *Ibidem*, p. 149 and Pina, Luís de, "Os Portugueses e a Exploração Científica do Ultramar" *Boletim Geral das Colónias*, XII, no. 131 (Maio, 1936); as a consequence of the tensions resulting from the confront between the new European ideas and the cultural and philosophical Portuguese scene, the literary field seems to be the most productive of all the areas shaken by the opening to Europe influence: a combination of the Italian and French literary currents structured the new critical approach to the subject. See Saraiva, António José, *op. cit.* (1985). Apart from the sending of Portuguese artists to European academies there was also the practice of inviting and receiving foreign experts to work and teach in the country. Some of them stayed permanently in Portugal and left an extensive and important work.

15. Kubler, George, *Portuguese Plain Architecture - Between Spices and Diamonds* (1972), p. 165.

16. Kubler, *op. cit.*, p. 165.

17. See Calado, Margarida, *Idem*; Carvalho, Ayres de, *D.João V e a arte do seu tempo* (1962) and Pereira, José Fernandes, *A Arquitectura e a Escultura de Mafra: retórica da perfeição* (1994).

18. It is interesting to know that D.João V ordered, for the planning of Mafra, a large number of detailed Roman architectural plans and sketches concerning some specific constructions, as chapels and vestries. This vast collection of architectural designs, to which was add some French examples, was used as research material for the whole architectural Joanine program: "Como podemos verificar, este conjunto de plantas, desenhos e notas explicativas constituiu um arquivo notável dos principais monumentos de Roma e de outras cidades de Itália, que se deve ter perdido com o Terramoto, sendo mais um capítulo a acrescentar à enciclopédia visual constituída por D.João V" ("As we can see, this group of plans, drawings and descriptive data represented a notable archive of the main monuments of Rome and of other Italian cities, which must have been lost with the Earthquake, representing another chapter in the visual encyclopaedia organised by D.João V"), Calado, *Ibidem*, p. 783. See also Carvalho, Ayres de, *op. cit.*, vol. 2.

19. Cardozo, Manuel, *Ibidem*, p. 153.

20. "Se alguém me acusar de que nesta parte abraço as máximas de Maquiavelo, enquanto diz que o governo monárquico seria o mais perfeito de todos, se o príncipe não tivesse validos, nem confessor, confesso a minha culpa sem arrependimento" - Cunha, D. Luís da, *Testamento Político*, p. 13.

21. Sanches, Ribeiro, *Cartas sobre a Educação da Mocidade* (*Letters concerning the education of youth*) quoted in Cardozo, Manuel, *Ibidem*, pp. 180-181.

22. Sanches, Ribeiro, *op. cit.* In this work, Ribeiro Sanches argues that the educational system should be secularized and controlled by the State. According to Manuel Cardozo, some of his ideas were developed in the Pombaline reform of secondary studies – *Ibidem*, p. 187. According to his biographers, Ribeiro Sanches' real contribution for the divulging of the new ideas in Portugal is controversial. Nevertheless, the extension of his work and the fact that some of the Portuguese eighteenth century educational and cultural reforms were conceived not very far from Ribeiro Sanches' proposals are significant enough to include his name in this list.

23. Cardozo, *Ibidem*, p. 189.

24. Gonçalves, António Rodrigues, *O protestante lusitano estudo biográfico e crítico sobre o Cavaleiro de Oliveira* (1950); Cardozo, Manuel, *Ibidem*, p. 171.

25. See Dias, Silva, *op. cit.* and Calado, Margarida, *Ibidem*.

## 1.3- The Pombaline project

1. Maxwell, Kenneth, *Pombal, Paradox of the Enlightenment* (1995), p. 2.

2. "A época chamada pombalina não é uma quebra, é uma continuação. Pombal pertence à sua época, ao Estado dentro do qual serviu, às classes de que dependeu, ao ambiente histórico que o criou e orientou " - Macedo, Jorge Borges de, *A Situação económica no tempo de Pombal* (1982), p. 31. This author is very critical with regard to the innovator character of Pombal's policy and does not consider Pombal's personal experience in England as a significant element in the conceiving of his economic program. Although we cannot agree with him in this matter, we note that his work was the first rigorous study of the Pombaline period

and as such was able to structure its analysis in terms of the overall Portuguese reality within a European context.

3. "Não estava, porém, nos objectivos do marquês de Pombal a extinção da aristocracia como grupo social dirigente. Pode mesmo dizer-se que o que ele pretendeu foi adaptá-la às suas novas condições de sobrevivência, por meio de uma política que já inspirara aos condes da Ericeira várias medidas e iniciativas de fomento industrial e de reforma cultural durante os reinados de D.Pedro II e D.João V" - Saraiva, José António and Lopes, Óscar, *História da Literatura Portuguesa* (1985), p. 596.

4. Sebastião José de Carvalho e Melo resided in London up until 1743, returning in May to Portugal for health reasons. In 1744, on his way to Vienna, he returned to London, where he stayed for six months. In 1745, he arrived in Vienna as the new envoy extraordinary, although he was formally assigned to his post in London up until 1747. See Barreto, José, *Sebastião José de Carvalho e Melo – Escritos Económicos de Londres (1741-1742)* (1986).

5. "A mais interessante [matéria], que pode fazer o assunto das relações de um ministro, que reside em Londres, considerei eu, depois que entrei nesta corte, é a de investigar, para as pôr na presença de el-rei, nosso senhor, as causas com que S.M. achou, logo nos princípios do seu reinado, o comércio de Portugal em tanta decadência, ao mesmo passo que o de Inglaterra e de outras nações tiveram um desmedido aumento ... " Biblioteca Nacional, Colecção Pombalina, cód. 657, fls. 61-92 – Letter to Cardeal da Mota, 19 February 1742. See Barreto, José, *op. cit.*, p. 158.

6. "(...) o modo, porque correm aqui os negocios, faz passar muitos seculos, em poucos annos, a quem ama a razão, e não pode com paciencia ver as injustiças" – Biblioteca Nacional, Colecção Pombalina, cód. 656 – Letter to Marco António de Azevedo Coutinho, 23 June 1741. See Boxer, Charles, "Pombal's Dictatorship and the Great Lisbon Earthquake, 1755", pp. 729-736.

7. "Rightly or wrongly, Pombal was convinced that the Jesuits fomented the opposition to certain drastic territorial adjustments in South America, which had been agreed upon between the Crowns of Spain and Portugal in 1750" – Boxer, Charles, *op. cit.*, p. 735. Regarding the Pombaline project for the colonisation of Brazil, namely in Amazonia and the conflict of interests between the Portuguese Crown and the Jesuits see Araujo, Renata Malcher de, *As Cidades da Amazonia no século XVIII* (1998).

8. See Barreto, José (ed.), *Idem*; Maxwell, Kenneth, "Sebastião José de Carvalho e Melo, Marquês de Pombal, Portuguese Ambassador in London, and his Relations with the English Factories in Lisbon and Oporto", *Portugal e o Reino Unido, A Aliança Revisitada* (1994), pp. 47-55; Rossa, Walter, *Para além da Baixa. Indícios de Planeamento Urbano na Lisboa Setecentista* (1998) and Serrão, Veríssimo, *O Marquês de Pombal: o homem, o diplomata e o estadista* (1982).

9. "... é uma das características essenciais da administração colonial portuguesa, o investimento de poder na figura dos agentes da Coroa, os seus funcionários" - Araujo, Renata, *op. cit.*, p. 28. From the early stages of the expansionist process, the Portuguese administrative colonial policy was conceived as a political centralized action contemplating, also, economic demands: the new territories were divided in *capitanias*, which could be granted to private explorers although according to specific norms envisaging the Crown's ultimate control of the territory. The Portuguese Crown's first attempts to colonize the interior of Brazil took place in the sixteenth century. However, a privileged coastal occupancy, complying with the contemporary trade interests, did not allow this process to be very effective. From the early seventeenth century, begins a more systematic colonisation process, which in some areas, southern and western Brazil, was carried out by individuals - the *bandeirantes*. Despite the apparent private character of these actions, they were, nevertheless, assisted and upheld by the Crown. This trend was maintained throughout most of the eighteenth century. Although its violent and aggressive character (destruction of the Jesuits missions where the Indians where kept to work and fight for the Jesuit cause), the *bandeirantes*' actions allowed the West and South Brazil to be physically occupied by the

Portuguese Crown and therefore to be considered as part of the Portuguese Empire following the treaties of Madrid in 1750 and Santo Ildefonso in 1777.

10. "A reforma era pois, assumidamente, uma situação de disputa de poder, o que a define em termos de uma estratégia política precisa. Esta por sua vez insere-se num contexto ideológico maior, da grande "Reforma do Mundo", pregada pelos ideais iluministas que advogavam o sair da Humanidade da fase de trevas e desconhecimento para a luz do saber" - Araujo, Renata, *Idem.*, p. 108. Regarding the Pombaline colonial policy in Brazil, see Renata Araujo's work which analysis the example of Amazonia and includes an extensive bibliography concerning the subject.

11. "Os ingleses não são sanguinários; contrariamente detestam os homicídios e as efusões de sangue. Se, por este princípio não têm aqui os estrangeiros que recear os perigos da vida, é quase impossível resistirem aos da fazenda. O inglês imagina, por prevenção inata, que nasceu para ser senhor dos cabedais do mundo; que é necessário ser bretão, como eles dizem, para ser hábil e capaz de possuir riquezas; que, por consequência, lhes andavam usurpadas aquelas que possui qualquer nação; que quando vexam a um estrangeiro, para lhe extorquirem o cabedal, ou divertirem o lucro que devia ter, não é isto um roubo que cometem, mas uma reivindicação, porque se restituem do que lhes pertence" - Melo, Sebastião José de Carvalho e, *Relação dos Gravames que ao Comercio e Vassalos de Portugal se tem inferido e estão actualmente inferindo por Inglaterra, com as infracções que os pactos recíprocos se tem feito por este segundo reyno assim nos actos de parlamento que publicou como nos costumes que stabeleceo e nos outros duverços meyos de que servio para fraudar os tratados do comercio entre as duas nações* (*List of the vexations that England has inflicted and is, currently, inflicting to the Commerce and Subjects of Portugal, with all the infractions done by the former kingdom to the pacts between the two countries, not only in the published Acts of Parliament but also in the established commerce practice and in all the other means, which this country used to defraud the commercial pacts between the two nations*), Colecção Pombalina (Pombaline Collection), cod. 635. Published in Barreto, José (ed.), *Ibidem*. See Azevedo, Lúcio, *O Marquês de Pombal e a sua Época* (1992), p. 25.

12. "... he axioma recebido de commum acordo que aquelle vassalo que descobre hum thezouro ou hum diamante de valor (por exemplo) de dez mil cruzados, não rende ao estado serviço digno de se comparar com aquelle que faria qualquer outro vassalo que mandasse para for hua carregação de generos em igual importância. A razão he porque o ganho do primeiro fica nelle proprio particularizado; o do segundo circula por hu infinito numero de mãos que nutre e engorda, exercita os marinheiros, emprega os navios, anima enfim todos os outros vassalos com o exemplo e cubiça do ganho a cuidar no comercio" - Carvalho, Sebastião José de, *Relação dos Gravames Que ao Comércio e Vassalos de Portugal Se têm Inferido pela Inglaterra* (*Collection of the Aggravations that to the Commerce and Subjects of Portugal have been Infered by England*), published in José Barreto, *Ibidem*, p. 40.

13. "Obrigado sempre a correr à frente do perigo e encontrar-lhe remédios de ocasião, sem ter a possibilidade de conceber um programa, Pombal é um homem de Estado empírico e pragmático.(...) Pombal é vítima das fraquezas da Nação, e, portanto, da necessidade de tudo começar pelo princípio, necessidade cuja força corruptora não podia, por si só e no prazo da sua vida, vencer – ou neutralizar. Agarrava-se, assim, a princípios já ultrapassados, mas nos quais tinha sido educado e que lhe pareciam ser ainda os únicos capazes de regenerar o País. E esquecia medidas essenciais como a construção de estradas – num país onde as duas maiores cidades, a 350 quilómetros de distância, estavam a uma semana de viagem uma da outra" - França, José-Augusto, *Lisboa Pombalina e o Iluminismo* (1983), p. 247.

14. See Calado, Margarida, *Arte e Sociedade na época de D.João V* (1995); Saraiva, António José, *op. cit.* and mainly Dias, Silva, *Portugal e a Cultura Europeia (sécs. XVI a XVIII)* (1953).

15. See Cardozo, Manuel, "The Internationalism of the Portuguese Enlightenment: The Role of the Estrangeirado, c. 1700-1750" *The Ibero-Americain Enlightenment*" (1971) and Calado, Margarida, *op. cit.*

16. Verney's ideas with regard to this matter were very much in contact with the main enlightened principles of empiricism. He extensively criticized Scholastic philosophy using the same arguments of the Protestant movement: he advocated that Theology should be based on the study of the Bible rather than on speculative dogmas and rules. See Andrade, António Alberto, *Vernei e a cultura do seu tempo* (1965).

17. See note 22 of the **section 1.2- Society and culture: the Baroque period.**

18. Cardozo, Manuel, *op. cit.*, p. 190.

19. With regard to the Pombaline reform, William Joel Simon states the following: "Textbooks utilized in the Spanish Reform plan were remarkably similar to those used later in Portugal. The direct link is difficult to trace, but there is a common thread in the desire to introduce modern science without overturning the traditional society. (...) in tracing the internal and external influences on the Reform period, particularly at the University of Coimbra, there are many contradictions and particularly Portuguese solutions. Although there is much in terms of creating a viable economy, a standing military force, and a foreign policy all designed to preserve the country within the context of shifting alliances, events in Spain always had repercussions in Portugal" - *Scientific Expeditions in the Portuguese Overseas Territories (1783-1808), and the role of Lisbon in the Intellectual-Scientific Community of the late Eighteenth Century* (1983), p. 5.

20. Cardozo, Manuel, *Idem*, p. 193: "At least 1, 752 Brazilian-born students enrolled in the University of Coimbra during the eighteenth century".

21. See Cardozo, *Ibidem*, p. 192 –"The Brazilian Portuguese in eighteenth-century Portugal have never been studied in depth from the point of view of their influences as an element of change. I suggested this when I wrote in another connection that 'the influx of Brazilians into Portugal throughout the eighteenth century coincided with, and possibly contributed to, movements of economic modernization and religious *aggiornamento* (...)".

22. França, José-Augusto, *op. cit.*

23. See Delaforce, Angela, *Art and Patronage in Eighteenth-Century Portugal* (2001), pp.1-28.

24. França, José- Augusto, *Idem*, p. 275.

## 1.4 – The turn of the century: regression or progress?

1. "Um dos aspectos mais evidentes dos tempos da regência, efectiva desde 1799, do futuro rei D.João VI é o prosseguimento das medidas reformistas pombalinas, e o afloramento de tensões entre sinais de Ilustração e não menos significativas atitudes de prevenção cultural face a ideias tidas como atentatórias da religião e do Estado" - Pereira, José Esteves, "As Ideias", *D.João VI e o seu tempo* (1999), pp. 59-67.

2. Regarding the scientific expeditions of Alexandre Rodrigues Ferreira to Brazil, Joaquim José da Silva to Angola and Manuel Galvão da Silva to Mozambique see Simon, William Joel, *Scientific Expeditions in the Portuguese Overseas Territories (1783-1808), and the role of Lisbon in the Intellectual-Scientific community of the late Eighteenth* Century (Lisbon, 1983) which displays an extensive bibliography related to the subject and Cardozo, Manuel, "The Internationalism of the Portuguese Enlightenment: The Role of the Estrangeirado, c. 1700-1750" *The Ibero-Americain Enlightenment*" (1971).

3. Most of this work was taken to France after the invasion of Portugal by Napoleon troops – See Simon, Willian Joel, *op. cit.*

4. "A cidade animava-se sobre as fortunas da burguesia pombalina, liberta do centralismo mercantilista anterior e convertida ao *laisser passer* fisiocrático" - Silva, Raquel Henriques da,

"A Cidade" *D.João VI e o seu tempo* (1999), pp. 53-57. See also, from the same author, *Lisboa Romântica (Urbanismo e Arquitectura)* (1997).

5. Cormatin, Pierre Marie Felicité, Baron de Chatelêt, *Travels in Portugal* (London, 1809), vol. II, pp.100-101 and Simon, William Joel, *Idem.*

## 2. Urban planning in Lisbon before 1755

### 2.1- Lisbon's growth from the early sixteenth century

1. See Murteira, Helena, *Lisboa da Restauração às Luzes* (1999) – "De facto, é extraordinária a alteração da configuração urbana durante este período, não só ao nível da extensão da cidade e multiplicação dos edifícios mais nobres (conventos, igrejas e palácios), como também em relação ao aumento da população. Em menos de um século, Lisboa deixa de facto de ser uma cidade medieval e torna-se numa cidade moderna, tanto na sua vivência quotidiana, como no posicionamento que adquire na sociedade europeia da época". ("In fact, the variation in urban form throughout this period is exceptional, not only with regard to the city's dimension and number of noble buildings (convents, churches and palaces), but also with regard to the increase of the population. In less than a century, Lisbon ceases to be a medieval city and becomes a pre-modern city, not only by its daily life, but also for its role in the European society at the time"), pp. 50-51.

2. "E se deixarmos especulações, e viermos á pratica, por ventura que acharemos ser a mayor do mundo (se não em cerco) ao menos em numero de vizinhos, e em gente, pois naõ acharaemos nesta Cidade curraes, nem quintaes, como ha em muytas das de que temos noticia; e tendo as outras de ordinario casas terreas, aqui as mais dellas saõ de tres sobrados, e quatro, e muytas de sinco, e algumas de seis, além de serem as ruas muy estreitas" - Oliveira, Frei Nicolau de, *Livro das Grandezas de Lisboa* (1804), pp. 111-112.

3. The Iberian Peninsula became part of the Islamic empire in 711, when it was invaded by Berberes (in the most part) and Arabs. Soon after, the Omiada dynasty established its sovereignty over the territory. The history of the Muslim occupation of the Peninsula is inextricably linked to the fate of the Islamic civilisation at the time: the rivalry between different ethnics led to a succession of different political and administrative forms of Islamic rule. The Omiadas were followed by the *Taifas'* califates and these by the *Almoravida* Emirate, which, in turn was followed, in the XII century, by the *Almoada* Califate. The long occupation of the Iberian Peninsula by the Muslims, which in the case of Portugal lasted up until the XIII century (Portugal was recognised as an independent kingdom in 1143, by the Zamora Treaty, and the Algarve was only finally conquered by the Portuguese king D.Afonso III and his Christian allies in 1253), left an important historical legacy. This legacy is mostly identifiable in the South of Portugal, namely in the urban layout and traditional building methods of the southern cities and towns: e.g. Silves and Mértola. In Lisbon, we can still trace features of the Muslim *medinas'* labyrinthine maze in the medieval core of the city.

4. *The Scots Magazine*, November 1755, vol. 17. This account was also published in other British periodicals, e.g. the *Gentleman's Magazine*.

5. "Sedimentando-se através dum longo conjunto de experiências, o espaço urbano tende progressivamente, nos finais do século XV, a tomar um valor estético regulável através duma legislação conducente a uma maior racionalidade da estrutura urbana" - Carita, Hélder, *Lisboa Manuelina* (1999), pp. 20-21.

6. "... logo nos primeiros anos do reinado de D.Manuel é iniciado em Lisboa um vasto conjunto de acções de carácter arquitectónico e urbano com profundas implicações na construção duma nova estrutura e imagem para a cidade" - Carita, Hélder, *op. cit.*, p. 53.

7. See Carita, Hélder, *Idem* - the author points out the fact that this vast urban project was contemporary to the reform of the currency and of the weighing and measuring systems.

8. "Se o primeiro plano se concentrou, sobretudo, na renovação e reestruturação urbana do centro da cidade, o segundo vai concentrar-se na criação de uma imagem de cidade imperial, com a construção de grandes edifícios de suporte ao comércio e administração do império" - Carita, Hélder, *Ibidem*, p. 99.

9. "Nesta linha de análise a origem e concepção urbanística da Vila Nova de Andrade aproxima-se progressivamente dum círculo de altos funcionários do Estado ligados ao poder central e a uma provedoria de obras reais" ("Following this line of analysis the urban origin and conceiving of *Vila Nova de Andrade* comes progressively close to a circle of high state officials linked to the central power and to a surveyor office of the royal works") - Carita, *Ibidem*, p. 105.

10. "...D. Manuel teria encomendado ao Bispo Paulo Jovio a elaboração de uma *perfeita história de Lisboa*, que nunca chegou a ser executada. É a primeira referência que encontrámos em relação a este tema - a ser verdade, poderá significar o início do entendimento da cidade como capital - não era só o reino que se procurava retratar nas crónicas reais, Lisboa adquiria um novo significado e uma nova dimensão, ambos expressos nas grandes realizações arquitectónicas de inícios de Quinhentos, e por essa razão merecia um tratamento especial" - Murteira, Helena, *op. cit.*, p. 56.

11. See Carita, Helder, *Ibidem*. - "Da articulação destes novos parâmetros arquitectónicos - fachada direita, alvenaria de pedra e cal e saliências máximas nas fachadas de palmo e meio - surge um edifício que se afasta radicalmente do edifício medieval de estrutura de madeira com andares em consola que encontramos ainda hoje frequentemente em Alfama e Mouraria" - "From the articulation between these new architectural parameters - straight facade, stone and whitewash masonry and maximum of one and a half palm facade projections - emerges a type of building radically away from the medieval building with a wooden frame and corbelled storeys that we even today find in Alfama and Mouraria", p. 183; "Através dum discurso urbano estruturado por um conjunto de noções abstractas (...) e que implicavam uma formação teórica fundamentada sobretudo na aritmética e no cálculo com base nos algarismos árabes, o modelo de rua-travessa evolui, dando origem a um modelo urbano fundamentado numa forma abstracta e geométrica: o quarteirão de base rectangular" - "Through an urban discourse structured by a number of abstract notions (...) which implied a theoretical education based mainly on arithmetics and on the Arab numeration calculation, the street-alley model develops, giving place to an urban model based on an abstract and geometrical form: the rectangular block", p. 190.

12. See Teixeira, Manuel and Valla, Margarida, *O Urbanismo Português - Séculos XIII-XIV* (1999), pp. 47-48: "As diferentes condições ecológicas em que as cidades ultramarinas foram construídas, as diferentes culturas com que se defrontavam e o papel específico de cada um destes aglomerados urbanos no quadro geral do projecto de colonização deram a cada uma destas cidades características específicas, referenciadas a um conjunto de circunstâncias locais. Ao mesmo tempo, todas elas tinham os mesmos modelos de referência, o que lhes dava um carácter comum. Estes modelos de referência eram as cidades existentes construídas em Portugal" ("The different ecological conditions in which the overseas cities were built, the different cultures with which they were in confront and the specific role of each of these urban settlements in the general framework of the colonisation project, gave to each one of these cities specific characteristics according to a number of local circumstances. Also, they all had the same reference models, which gave them a shared character. These reference models were the cities built in Portugal").

13. See Teixeira, Manuel, *op. cit.*, p. 83: "A modernização da vida civil que se verifica a partir do século XVI corresponde também a uma concentração do poder real e à reforma da administração local. Este processo de modernização teve a sua expressão urbana na reforma dos espaços públicos das cidades e na reconstrução de edifícios institucionais, de natureza civil ou religiosa. (...) É neste contexto que se devem entender as preocupações de D. Manuel I relativamente ao ordenamento do espaço urbano, a que não devem ser também estranhas a difusão em Portugal dos novos ideais renascentistas sobre a arquitectura e a cidade".

14. In 1666, the comissioners' report regarding the rebuilding of London applies exactly the same concepts: "...whether streets shall be laied out in places where they formely were, or in such other as shall bee demonstrated to be more for the **beauty** and **convenience** of the city, beeing that no man can tell how to offer any acceptable designe till this bee determined, nor any one to build till that design be agreed upon" - Extract of the Comissioners' report - Reddaway, T.F., *The Rebuilding of London after the Great Fire* (1951), p. 60.

15. See Carita, Hélder, *Ibidem*

16. See Rossa, Walter, Rossa, Walter, *Para além da Baixa. Indícios de Planeamento Urbano na Lisboa Setecentista* (1998) and Murteira, Helena, *Idem.*

17. See Lima, Durval Pires de, *História dos mosteiros, conventos e casas religiosas de Lisboa,...* 2 vols. (1950-1972) and Murteira, Helena, *Ibidem.*

18. "Faltaram, pelos primeiros annos da aclamação, uns homens a que chamavam carretões, os quaes eram obrigados á limpeza principal da cidade, e, com a occasião da guerra, se não acharam outros d'esta inferioridade que se quizessem applicar a este exercício; cresciam as conferencias n'este senado sobre esta materia, porque as queixas do povo não paravam, e multiplicavam-se as ordens do governo, não só porque as praças da cidade estavam já intratáveis, mas em razão do perigo que se temia" - *Assento de Vereação de 11 de Outubro de 1668* (City Council Accord 11 October 1668), Liv°. IV dos Assentos do Senado, fl. 210 v. - A.H.C.M.L. See Murteira, Helena, *Ibidem*, p. 80.

19. "Por se entender que será de grande utilidade e beneficio publico estarem as ruas d'esta cidade alumiadas de noite, assim como estão outras muitas côrtes estrangeiras..." - *Decreto de 25 de Outubro de 1689* (Decree 25 October 1689) , Liv° XI de cons. e decr. de D.Pedro II, fl. 16 - A.H.C.M.L. See Murteira, Helena, *Ibidem*, p. 81.

20. "Porquanto tenho determinado dar nova forma ao senado da camara d'esta cidade, e para o bom governo d'ella e do bem publico convém saber-se ao certo o que importam as suas rendas, as despezas que estão applicadas e os empenhos em que estão, para se tratar que parecer conveniente ..." – Oliveira, Eduardo Freire de, *Elementos para a História do Município de Lisboa*, VIII, pp. 311-313. *Decreto 26 de Setembro de 1671*, Livr° II de Cons. e Decr. do Príncipe D.Pedro II, fl. 21 and fl. 98 - A.H.C.M.L. See Murteira, Helena, *Ibidem*, p.81.

21. "Senhor - A forma que os senhores reis predecessores de V.Mag.de, mandaram guardar na disposição das praças, ruas e edifícios d'esta cidade, é certo foi accomodada com a antiguidade dos tempos em que se obraram, e com o uso e possibilidade d'elles, e tambem com a grandeza e ostentação com que a nobreza da côrte então se tratava. Cresceu, porém, a magnificencia do tratamento dos vassalos e a opulencia de coches e liteiras, que n'aquelle se não usava, e cada vez com tão grande excesso mais, que já no tempo do governo de Castella se ordenou ao senado da camara d'esta cidade puzesse com effeito em execução a obra de uma rua nova, junto ao Espírito Santo, na entrada do bêco de João Deus, que se communica com as Fangas da Farinha, (...) determinou o senhor rei D.João o 4ª, ..., pae de V. Magde., que esta rua se fizesse com toda a brevidade possivel (...)" - *Elementos*, VI, pp. 532-33. *Consulta da Câmara ao Rei de 24 de Janeiro de 1665* (City Council Representation to the King 24 January 1665), Liv.° III de Cons. e Decr. de D.Afonso VI, fl. 26 - AHCML. See Murteira, Helena, *Ibidem*, p. 85.

22. "Procurando o senado mostrar a sua obediencia na execução das ordens de V.Magestade e o seu zelo no que respeita ao bem publico, tratou de empregar o dinheiro que resultou das vendas que se têem feito de alguns officios, em compra de algumas das casas das muitas de que se necessita para a obra referida, para se ir dando principio a ella, o que se não pôde executar até o presente, por causa de alguns dos donos das ditas casas, depois das avaliações feitas e ajustadas, com embargos e aggravos que interpuzeram para o desembargo do paço, têem empatado derribarem-se as casas, principiando-se a obra; e porque as que são de utilidade publica, se não podem impedir com semelhantes requerimentos, depois da avaliação feita por louvados, na fórma da lei, do justo valor se satisfaz ao que o direito dispões n'este caso, para se não poder impedir derribarem-se as

casas e fazer-se a obra publica, en'esta mesma fórma se procede em todas as côrtes da Europa, por ser este procedimento muito conforme a direito, en'esta maneira se procedeu quando se fez a rua Nova do Almada e a dos Ourives da Prata, (...) o que tudo considerado, pareceu ao senado fazer presente a V.Magestade o referido, para que V.Magestade se sirva declarar que, feitas as avaliações das propriedades, na fórma que fica dito, o senado as possa logo tomar e derribar (...)" - *Elementos*, IX, pp. 220-222. *Consulta da Câmara ao Rei de 22 de Setembro de 1690*, Liv.º VI de Reg.º de Cons. e Decr. de D.Pedro II, fl. 400 v. – AHCML. See Murteira, Helena, *Ibidem*, p. 92.

23. "Por entender serem convenientes ao meu real serviço e bem publico as observações seguintes, mando e ordeno ao senado da camara d'esta côrte e cidade de Lisboa que, não obstante quaesquer leis, ordenações ou costumes em contrario, não consinta se faça rua ou serventia alguma que tenha entrada e sahida publica e geral, menor de cinco varas ou vinte e cinco palmos craveiros de largo, seja dentro ou fóra do povoado; porém que nas ruas e estradas principaes e de muito concurso se seguirá, quanto á largura, o estylo observado com que se formaram algumas que já se acham feitas, assim dentro como fóra d'esta côrte, como são as dos Ourives e outras semelhantes; e que, em distancias competentes e commodas, se deixem praças com capacidade para as commodidades publicas; e que nas partes em que se juntam muitas aguas com pouca correnteza e se receberem aguas se busquem sahidas para as praias, á imitação do cano real que passa por baixo do Terreiro do Paço. E a execução do referido e de tudo o mais que conduzir para melhor commodo, symetria e adorno da cidade, recommendo muito ao mesmo senado da camara, para que, distribuindo-a pelos desembargadores do pelouro e mais pessoas a quem tocar, se use de todos os meios proporcionados para se conseguir, evitando-se a deformidade com que tenho noticia se vão formando novas ruas e bairros, quando se devia esperar que, augmentando-se, se melhorassem" – *Decreto Real sobre a largura que hão-de ter as ruas da cidade e outras disposições a isso referentes, 13 Abril de 1745* (Royal Decree 13 April 1745) – Livro 21º de Consultas e Decretos de D. João V do Senado Ocidental da Camara, Chancelarias Régias, cod. 151, fl. 17- AHCML. This document followed the City Council Minute, dated 14 October 1718, normalising the size of the façade projections: see Murteira, Helena, *Ibidem*, p. 124, p.126 and p. 139 and Rossa, Walter, *op. cit.*, p. 34.

24. *Idem.*

25. *Ibidem.*

26. "As obras levadas a cabo pelos particulares, fundamentalmente religiosos, eram apreciadas minuciosamente pelo Senado da Câmara, e só eram deferidas caso não contribuíssem para a deformidade da rua ou seu desfeamento. Muitos são os pedidos para alargamento de sacristias ou construção de novas capelas. As petições são analisadas no local pelos técnicos camarários e, muitas vezes, um pedido de apenas quatro palmos de chão é indeferido por se considerar que iria constituir um maior entrave à circulação da área. Algumas vezes, são os próprios particulares que pretendem abrir terreiros, junto aos seus palácios e conventos. Mais uma vez, é a utilização do coche e carruagens que vem determinar a necessidade destas obras. Nas suas petições, os próprios particulares invocam muitas vezes, especialmente nestes últimos casos, a utilidade pública e a formosura urbana" - Murteira, Helena, *Ibidem*, p. 97.

27. "(...) pareceu que em nenhum caso se devem deixar tomar trez palmos da rua, porque, ao mesmo tempo em que o senado anda facilitando serventias e tirando cantos das ruas, se não deve deixar tomar parte d'uma tão principal (...); e que é matéria mui digna de consideração de V. Alteza os muitos conventos que se fazem n'esta côrte, com grande prejuízo do público, contra toda a razão política, quando em menos conventos pôde Deus estar mais decentemente venerado e melhor servido" - regarding the petition of the religious of *Santo Agostinho* for some refurbishment works in their convent on *Rua Nova do Almada* - *Elementos*, VIII, p. 250. *Consulta da Câmara ao Rei de 17 de Dezembro de 1677*, Liv.º V de Cons. e Decr. do príncipe D.Pedro - AHCML. See Murteira, Helena, *Ibidem*, p. 97.

28. The project of a new city, to the west of Lisbon, had been developing since the turn of the century. As referred to in **section 1.2 – Society and culture: the Baroque period**, D.João V

tried to put it into practice: Juvarra was called to draw the project of a new royal residence and cathedral in that area. Although the city continued to develop to the west, benefiting also from some royal projects, Juvarra's plans were never carried out. The king maintained this project in the administrative division of Lisbon in western and eastern with different religious headquarters: the medieval cathedral (*Sé*) and the new cathedral (*Patriarcal*).

29. "... conferir a Lisboa a dimensão de uma capital europeia integrando-a num contexto político, religioso e cultural de referentes comuns, e para o conseguir, utilizar o formulário artístico do barroco internacional, expresso em projectos dominados pelo sentido do espectáculo (...)" - Murteira, Helena, *Ibidem*, pp. 141-142.

30. "Mas o que facto se construiu utilizou o seu conhecimento prático, como nunca então em Lisboa se havia intentado. Digamos que D.João V buscou o desenho do barroco italiano para uma encenação dos seus edifícios de poder e acabou por utilizar a experiência e o trabalho do engenheiro militar para realizar o que de facto se fez" - Murteira, Helena,*Ibidem*, p. 142.

31. See Murteira, Helena, *Ibidem*, p.126.

32. "...parece que não devia entrar em duvida esta materia, porque no referido despacho se declara que o supplicante assistirá ás vistorias que se fizerem para edificios em sitio e área do público, e nas mais que respeitarem ao ornato e symetria, aspecto da cidade e largura das suas ruas, e esta generalidade comprehende todas quantas vistorias se podem fazer, por ser certo que não póde haver vistoria alguma que não respeite ao ornato e symetria da cidade" - *Elementos*, XV, pp. 492-496. *Consulta da Câmara ao Rei de 17 de Janeiro de 1754*, Liv.º V de Cons. e Decr. de D.José I, fl. 25 - AHCML. See Murteira, Helena, *Ibidem*, p. 127.

## 2.2- The role of the military engineering

1. "As reacções à "revolução da pólvora" foram lentas em Portugal, devido ao grande desenvolvimento que aqui havia conhecido a construção militar do último gótico, com seus castelos de recorte elegante e decorativo" - Moreira, Rafael, "A Arquitectura Militar" *História da Arte em Portugal - o Maneirismo* (1986), vol. 7, p. 138.

2. "Um elemento, no entanto, transformará a feitoria comercial em território do império – a fortificação. O acto de *fazer fortaleza* aparece, citado, com orgulho nas crónicas da Índia como garante da soberania portuguesa. À sombra das fortificações, no território por elas estabelecido, surgiram as primeiras instalações urbanas. Na repetição deste processo funda-se o paradigma inicial do urbanismo da expansão portuguesa, que associa a cidade à fortificação" - Araújo, Renata, *As Cidades da Amazónia no século XVIII* (1998), p.25.

3. See Rossa, Walter, *Cidades Indo-Portuguesas*, (1997).

4. "No domínio da arte bélica, perante as necessidades no Oriente e no Norte de Africa, passámos da espionagem e do experimentalismo das governações de D.João II e de D.Manuel I à importação maciça de conhecimentos, sob a forma de textos e desenhos, através do envio de bolseiros e do recrutamento de técnicos em especial italianos" - Rossa, *op. cit.* (1997), p.22.

5. "Essa idiossincracia nacional explica que não se tenha copiado nenhum modelo italiano. Os projectos-base de Benedito [o italiano Benedito de Ravena] foram revistos no local pelos arquitectos Miguel de Arruda e Diogo de Torralva (...) e erguidos pelos homens de Castilho. Deste modo, por uma impressionante coalizão de esforços (que deu que falar na época), de um salto se colocou Portugal a par da última palavra em matéria de fortificação" - Moreira, Rafael, *Idem*, p. 140 - the author is referring to the building of the Mazagão and Ceuta fortresses (1541-1543), which initiated a process soon extended throughout the African and Indian possessions.With regard to the development of the military architecture in Portugal and its empire see also: Boxer, C.R. and Azevedo, Carlos de *A Fortaleza de Jesus e os Portugueses em Mombaça (1593-1729)* (1960); Kirkman, James Spedding, *Fort Jesus: A*

*Portuguese Fortress on the East African* Coast (1974); Moreira, Rafael, *História das Fortificações Portuguesas no Mundo* (1989); "A Arquitectura Militar do Renascimento em Portugal", *A Introdução da Arte da Renascença na Península Ibérica* (1981); "Arquitectura Militar: História da Arte e Arqueologia", *Oceanos* (1989) and "Inofre de Carvalho: a Renaissance Architect in the Gulf", *Bahrain in the XVI century: An Impregnable Island* (1988), pp. 85-92.

6. See Moreira, Rafael, "A Arquitectura Militar" *História da Arte em Portugal - o Maneirismo* (1986) and Teixeira, Manuel, *O Urbanismo Português - Séculos XIII-XIV* (1999).

7. "Os dois tratados (ou versões sucessivas de um só tratado ...) que identificámos e lhe atribuímos há alguns anos ... dão-nos o retrato fiel desse ensino: dependência absoluta da tratadística italiana; uso de Serlio e de Vitrúvio como livros de texto a explicar aos alunos; boa educação clássica, aliada a uma impressionante cultura científica que vai da teoria musical renascentista ... à cosmografia, astronomia (de que já conhece Copérnico), até certo pendor pelas matemáticas esotéricas muito comum no tempo" - Moreira, Rafael, *op. cit.*, pp. 148-148. See also Teixeira, Manuel, *Idem.*

8. "Tereis cuidado e lembrança de mandardes saber de Filipe Tercio que é engenheiro italiano, que ia no exercito do senhor Rei meu sobrinho, que deos tem, e o fareis resgatar logo, porque é homem util e que convem para o serviço da sua profissão" - See Murteira, Helena, *Ibidem*, p. 129.

9. "Ao chegar ao poder, a Restauração encontrava, pois, um corpo homogéneo e dinâmico de engenheiros militares baseado numa sólida estrutura institucional que se mantivera de pé: condições que tornaram possível o gigantesco esforço de fortificação empreendido a partir de 1640, sem o qual Portugal não seria hoje uma nação independente"- Moreira, *Idem*, p. 151. See also Murteira, *Ibidem*, p. 131 – "Herdámos, ironicamente, no período da Restauração, o que na área do ensino se havia desenvolvido na época do domínio espanhol, que, por sua vez, havia comungado da experiência desenvolvida durante Quinhentos, pelos portugueses. Mas a ironia do facto deixa de fazer sentido se pensarmos que os ambos os Impérios lutavam, com as suas *armas* militares técnicas e teóricas, para a prossecução dos mesmos objectivos" ("We inherited, ironically, in the Restoration period, what had developed during the Spanish rule in the field of the education, which, in turn, had benefited from the experience gathered by the Portuguese throughout the fifteen hundreds. However, the irony ceases to make sense if we think that both Empires fought, with their respective technical and theoretical weapons to the accomplishment of the same purposes").

10. With regard to this subject see: Aires, Cristovão, "Um capítulo da Guerra da Restauração (1660 a 1668) – O Conde de Schonberg em Portugal", *História do Exército* (1897); Castro, Castro, Padre João Baptista de, *Mappa de Portugal Antigo e Moderno* (1763), vol. II, pp. 378-379; Murteira, Helena, *Ibidem* and Rossa, Walter, *Idem.*

11. "...e conuem criar sugeitos natu/raes que são menos custozos, e muito mais seguros que os estrangeiros" - *Conselho de Guerra. Consulta de 17 de Junho de 165*8 (War Committee. Consultation 17 June 1658). Maço 18 (ANTT). See Murteira, *Ibidem.*, p. 134.

12. "O processo de ensino é tão pragmático quanto a metodologia a ser ensinada e fundamenta-se na nomeação de um engenheiro capaz e experiente designado para ensinar aos que quisessem e tivessem talentos para aprender" - Araújo, Renata, *op. cit.*, p.41

13. "O ensino da arquitectura civil, no Paço da Ribeira, e o de arquitectura militar, ou engenharia militar, como em Seiscentos se passou a designar esta vertente da técnica construtiva, na Aula de Fortificação, depois Academia Militar, não separou completamente o arquitecto civil do engenheiro; pelo contrário, completou a formação dos nossos técnicos mais qualificados que quase sempre obtiveram os dois graus de ensino" – Murteira, Helena, *Ibidem*, p. 136. This subject is not completely clear. There was, in fact, a Class set up in the Ribeira Palace in the late sixteenth century, which had their own guidelines and that established "three places or positions for the learning of architecture". To this school was linked the statutes of the Master Architects of the Royal works. The Class or school was still

active in the late seventeenth century. The relationship between this graduation and the graduation in military engineering is not, however, clearly distinct in what regards the professional status of our technicians. The teaching of the military engineering had, undoubtedly, a more extensive scope: it prepared experts in military engineering, civil architecture and also in town planning. See also Soromenho, Miguel, *Manuel Pinto de Villalobos (da engenharia militar à arquitectura)* (1991).

14. In the early seventeenth century, still during the Spanish occupation, Phillip III of Spain establishes the teaching of military architecture in the Jesuit school of Sto Antão, in Lisbon. In 1641, soon after the Restoration of Independence, the Portuguese king D.João IV founded the teaching of Artillery and Geometry. Finally, in 1647, D.João IV creates the *Aula de Fortificação* (Fortification school or class), which preceded the Military Academy. See Murteira, Helena, *Ibidem* and Soromenho, Miguel, *op. cit.*

15. See Murteira, Helena, *Ibidem*, which includes important bibliography with regard to this subject.

16. " [Esse] velho substrato de cultura maneirista peninsular, alheio às grandes mutações estilísticas, porém solidamente responsável nas suas aplicações à Cosmografia e à Arquitectura Militar: isto é, à navegação e à defesa, que constituíam os pilares do império e razão de ser da sua cultura" – Moreira, Rafael, "Uma Utopia Urbanística Pombalina: o *Tratado de Ruação* de José Figueiredo Seixas, *Pombal Revisitado,* II (1984), p. 141.

17. Murteira, Helena, *Ibidem*, p. 135.

18. Luís Serrão Pimentel was a rich example of the academic and professional evolution of the most prominent Portuguese military engineers: he studied nautical sciences and mathematics and through these he applied himself in the learning of the military engineering. As teacher in the *Aula da Fortificação*, he compiled an extensive personal library on the subject, had contacts with other European military engineers and gave instruction to a great number of national experts. See Moreira, Rafael, "Do rigor teórico à urgência prática: a arquitectura militar", *História da Arte em Portugal – o Limiar do Barroco*, vol. 8 (1986), pp. 67-85.

19. "A obra de Luís Serrão Pimentel ... o conhecido *Methodo Lusitanico de desenhar as fortificações*, impresso em Lisboa em 1680 e dedicado a D. Pedro II, revela um conhecimento profundo do que então se praticava na Europa, ao mesmo tempo que dá o *tom* dos princípios pelos quais se regiam as nossas construções defensivas e urbanísticas durante a referida centúria. Os seus conhecimentos iam para além da engenharia militar e, atestando o carácter polifacetado do ensino da matéria em Seiscentos, compreendiam os domínios da cosmografia e da arte de navegar" - Murteira, *Ibidem*, p. 132.

20. "A Coroa espanhola forneceu às suas colónias um regulamento para a formação de cidades. A Coroa portuguesa forneceu funcionários que as fizessem. Funcionários do urbanismo, como os havia da fazenda, da justiça ou da religião" - Araújo, *Idem*, p. 28.

21. "Desses formulários consta normalmente uma primeira referência à praça com seu Pelourinho, primeira área a demarcar, onde se deve edificar a Igreja, a Casa da Câmara e cadeia e a partir da qual devem partir as ruas em linha recta. Determina-se depois que as casas sejam obrigatoriamente construídas com a mesma figura exterior, para que se conserve sempre *a mesma formosura da terra e a mesma largura das ruas*" - Correia, Horta, *Vila Real de Santo António. Urbanismo e Poder na Política Pombalina* (1997), p. 133 . The *Pelourinho* was a pillar (column) built in the principal square of the Portuguese main cities. From the medieval period, it represented the administrative and judicial autonomy of the council, although obtained through a royal prerogative. Also, it was, particularly in medieval times, the pillory.

22. "A urbanização do Brasil significou a introdução no país não apenas de um modelo físico de implantação urbana, mas de uma verdadeira cultura urbana, moderna" - Araújo, *Ibidem*, p. 57.

23. "...com alguma variedade e grande maleabilidade, os engenheiros militares, formados em Portugal ou no Brasil, desenvolveram ao longo deste século XVIII um certo urbanismo prático, onde não estará ausente uma certa fundamentação teórica" – Correia, Horta, "Arquitectura-Maneirismo e *estilo chão*", *História da Arte em Portugal - O Maneirismo* (1986), p. 133.

24. Araújo, *Ibidem*.

25. "Foram essa tradição e essa prática, veiculadas pelas estruturas escolares e administrativas da "fortificação" e assim sucessivamente actualizadas, que chegaram até Manuel da Maia e ao grupo de oficiais por ele escolhidos para a reconstrução de Lisboa" - Correia, José Eduardo Horta, *op. cit.*, p. 135. See also from the same author: *Pragmatismo e utopismo na criação urbanística de raiz portuguesa no século XVIII*, paper to the 2nd Congress of the Baroque in Ouro Preto (Brazil); *Vila Real de Santo António, Urbanismo e Poder na Política Pombalina*.

26. "A cidade pombalina é a cidade eloquente, a forma que se pretende falante e persuasiva, que se advoga demiúrgica e capaz de civilizar os povos. A tipologia arquitectónica encontra-se também submetida ao discurso da cidade, que o veicula pela lógica do seu conjunto. E sempre se retoma Lisboa como exemplo" - Araújo, *Ibidem*, p. 65.

## 3- The Great Earthquake of 1755 and its European repercussions

1. See Kendrick, *The Lisbon Earthquake* (1956), p. 34.

2. Mendonça, Joaquim Moreira de, *História Universal dos Terremotos* (1758).

3. See França, José-Augusto, *Lisboa Pombalina e o Iluminismo* (1983).

4. Kendrick, *op. cit.*, p. 32.

5. Mendonça, Joaquim Moreira de, *op. cit.*

6. See Sousa, Luís Pereira, *Efeitos do terramoto de 1755 nas construções de Lisboa* (Lisboa, 1909) and *O terramoto do 1º de Novembro de 1755 em Portugal e um estudo demográfico* (1919-1932) and Kendrick, *Idem*, pp. 29-32: "The area of severe shock that included Lisbon, as mapped by Pereira de Sousa ..., extended along the north shore of the Tagus at the Lisbon bend from a point close to the present Santos station on the Cascais line to Braço de Prata, half-way between Lisbon and Sacavem, and is a belt of country six or seven miles long extending inland to a depth of about one and a half miles. Inside this area there were districts in which shocks were of greater intensity and did more damage than elsewhere".

7. Kendrick, *Ibidem*, p. 32.

8. Lisbon, Nov. 6, 1755 - Castres, Abraham "Letter from Abr. Castres, Esq; Envoy Extraordinary to the King of Portugal", *The Gentleman's Magazine*, London, November 1755, vol. XXV, pp. 556-558.

9. *The Caledonian Mercury*, n. 5302, December 2, 1755.

10. Lodge, Sir Richard (edit.), *The Private Correspondence of Sir Benjamin Keene* (1933), p. 435, n.1.

11. *The Caledonian Mercury*, n. 5303, December 4, 1755.

12. *The Scots Magazine*, vol. 17, Nov. 1755,p. 554.

13. *The Gentleman's Magazine*, November 1755, p. 521.

14. *The Gentleman's Magazine*, vol. 25, December 1755, pp. 558-559. See also *The Lisbon earthquake of 1755 (Some British eye-witness accounts)* (1987) pp. 71-73. The British accounts of the earthquake were published soon after the event by the various contemporary British newspapers. The British Historical Society of Portugal in two publications compiled some of these accounts: *The Lisbon earthquake of 1755*, (1987) and *An account by an eye-witness of the Lisbon earthquake of November 1, 1755*, (1985).

15. Cheke, *Dictator of Portugal: A life of the Marquis of Pombal 1699-1782* (1938), p. 73.

16. Kendrick, *Ibidem*, p. 29.

17. *The Scots Magazine - A letter from a merchant at Lisbon*, vol. 18, February 1756.

18. Le Brun, Ponce-Denis Écouchard, *Odes sur Lisbonne et sur les causes physiques des tremblements de terre de 1755, par M. le Brun, suivies d'un Examen physique adressé à l'auteur sur les mêmes revolutions* (1756).

19. *The Scots Magazine*, vol. 17, November 1755, p. 563.

20. Probably the most impressive of all of these illustrations (for some authors, they are also some of the most accurate) are the engravings by Jacques Philippe Le Bas, chief engraver to King Louis XV of France, which picture the ruins of some of the most significant Lisbon buildings.

21. Davison, Charles, *Great Earthquakes* (1936), p. 2.

22. Throughout its history, Lisbon suffered numerous earthquakes. From the fourteenth century there are records of these events. On the 7 January 1531, a violent earthquake shook Portugal. Nineteen days later, Lisbon suffered another earthquake which seems to have caused destruction parallel to the one in 1755: more than one thousand and five hundred houses were destroyed and many people died buried underneath the debris. In 1551, another earthquake killed two thousand people in Lisbon. There are records of earthquakes in Portugal and in Lisbon dating from 1575, 1597, 1598 and 1722 (a severe earthquake was also felt in the seventeenth century): see Serrão, Joel (ed.), *Dicionário de História de Portugal*, vol. VI.

23. Davison, Charles, *op. cit.*, p. 5.

24. See Davidson, *Idem*, p. 6: "The distance that separates Lisbon from Mequinez is 400 miles, Mequinez from Algiers 690 miles, and Lisbon from Granada 317 miles".

25. Davison, Charles, *Ibidem*, p. 6.

26. See Davison, *Ibidem*, p. 3. The author gives us an important bibliography with regard to this matter, namely, Bevis, John, *The History and Philosophy of Earthquakes* (1757).

27. *The London Gazette*, 29 November 1755.

28. Goethe, who was six years old at the time of the earthquake of 1755, recalls this occurrence in his autobiography: *Dichtung und Wahrheit.*

29. *The Gentleman's Magazine*, November 1755, p. 521.

30. Extract of Mr. Harvey's speech with regard to the earthquake published in *The Caledonian Mercury*, Num. 5310, Saturday, December 20, 1755.

31. *The Gentleman's Magazine*, February 1756, p. 68.

32. Davison, *Ibidem*, p. 3. See also Sousa, Luís Pereira de, *op. cit.* (1909) and (1919 -1932), 4 vols. (In this last work, the author based his analysis on the parish survey of Portugal).

33. "For several days he lived in his carriage, scribbling proclamations and orders, despatching and receiving courtiers, reassuring the populace, and exhorting them to the work of rescue" - Quoted in Boxer, Charles, "Pombal's Dictartoship ..", p. 732.

34. Silva, José Álvares da, *Investigação das causas proximas do Terremoto, succedido em Lisboa no anno de 17 11/1 55* (1756) and *Precauções Medicas contra algumas remotas consequencias, que se podem excitar do Terremoto de 17 11/1 55* (1756).

35. Ivo, Miguel Tibério Pedegache Brandão, *Nova e Fiel relação do terremoto que experimentou Lisboa e todo Portugal no 1 de Novembro 1755, com algumas observações curiosas e a explicação das suas causas* (1756).

36. Mendonça, Joaquim Moreira de, *Idem.*

37. See Kendrick, *Ibidem*, pp. 58 -118.

38. Kendrick, *Ibidem*, p. 59.

39. Davison, *Ibidem*, p. 3. The author names also the study by E. Bertrand "Mémoires Historiques et Physiques sur les tremblements de Terre", published in 1757; John Michell's memoir "Conjectures concerning the cause and observations upon the phenomena of earthquakes ..." and the works of Alexis Perrey and Sir Charles Lyell which also consider in detail the earthquake of 1755.

40. Silveira, Luís (translation), *Ensaios de Kant a propósito do terremoto de 1755* (1955).

41. See **Part II. Section 1.2 – Society and culture: the Baroque period**.

42. *The Gentleman's Magazine*, February 1756, p. 71.

43. Voltaire, *Poéme sur le désastre de Lisbonne* (1756) - extract.

44. Voltaire, *op. cit*, Preface.

45. Voltaire, *Candide ou l'Optimisme*, chap. V (1759).

46. Johnson, Samuel, "On Optimism – Review of Soame Jenyns's: A Free Enquiry into the Nature and Origin of Evil", *Literary Magazine*, May, June and July 1757; Lynam, Robert (edit.) *The Works of Samuel Johnson* (1825), vol. 5, p. 113. See also Eliot, Simon and Stern, Beverley (edit.), *The Age of Enlightenment*, vol. I (1979), pp. 108-120.

47. Rousseau, Jean-Jacques, *Lettre à Monsieur de Voltaire (Sur la Providence)*, August 18, 1756, http://gallnar.net/rousseau/lettreavoltaire.html and http://www.missouri.edu/~histzut/voltaire.html - "Ne vous y trompez pas, Monsieur, il arrive tout le contraire de ce que vous proposez. Cet optimisme que vous trouvez si cruel me console pourtant dans les mêmes douleurs que vous me peignez comme insupportables. Le Poëme de Pope adoucit mes maux & me porte à la patiente; le vôtre aigrit mês peines, m'excite au murmure, & m'ôtant tout hors une espérance ébranlée, il me réduit au désespoir".

48. Kendrick, *Ibidem*, p. 139.

49. Lodge, Sir Richard, *op. cit.*, p. 434. The sister of the Spanish king, Ferdinand VI, was Queen Mariana de Bourbon wife of the Portuguese king D.José I. However, according to contemporary sources, the Portuguese king declined the Spanish aid: see França, José-Augusto, *Ibidem*.

50. *The London Gazette*, n. 9566, "From Tuesday March 23, to Saturday March 27, 1756".

51. *The London Gazette*, n. 9574, "From Tuesday April 13, to Saturday April 17, 1756".

52. See Cheke, *op. cit*, Estorninho, Carlos, *O Terramoto de Lisboa e a sua repercussão nas Relações Luso-Britânicas* (1956) and Kendrick, *Ibidem*.

53. *The Scots Magazine*, vol. 17, November 1755, p. 557. This news also refers to Sir Benjamin Keene's letter of 10 November which was read, the 28 November, in the House of Lords. Boxer states that the House of Commons agreed to send to Portugal £ 100,000 distributed equally in specie and goods – "Pombal's Dictatorship ...", p. 734.

54. *The Scots Magazine*, vol. 18, March 1756, p. 138. "*Lisbon, Feb. 22.* On the 19th Instant, his Britannick Majesty's Ships the Hampton Court and the Greyhound arrived here with several Merchantmen under their Convoy. There are now ten Ships with Provisions arrived from London, one from Dartmouth, and five from Ireland". – *The London Gazette*, numb. 9562, "From Tuesday March 9, to Saturday March 13, 1756". See also Boxer, Charles, "Pombal Dictactorship ..." and "Some contemporary reactions to the Lisbon Earthquake of 1755": "Offers of help came from all over Western Europe, but the most substantial relief came from Britain and Spain", p. 11.

55. *The Gentleman's Magazine*, November 1755, p. 593.

56. *The London Gazette*, n. 9556, "From Tuesday February 17, to Saturday February 21, 1756".

57. See França, José-Augusto, *op.cit.*

58. Letter to his sister in Edinburgh. Fleming, Robert, *Robert Adam and his Circle* (1962), p. 205.

59. Quoted in Fleming, Robert, *op. cit.*, pp. 204-205. According to the author, Robert Adam was hoping for the support of Lord Hopetoun and Sir William Stanhope. Allan Ramsay proposed to write to the Duke of Argyll "to see what step he would take in it".

60. Quoted in Fleming, *Idem*. Charles – Louis Clérisseau (b. 1721 – d. 1820), the French architect and artist.

61. See Brown, Iain Gordon, "The picturesque vision: Fact and Fancy in the capriccio plates of Robert Adam's *Spalatro*", *Apollo*, n. 366 (Aug. 1992), London, pp. 76-82. Iain Gordon Brown refers to the duality of approach showed by Clérisseau and Robert Adam's views on the city of Split: "A principal theme explored in the exhibition is the dichotomy between what Adam elsewhere called the claims of *Truth* and *Fancy*. Archaeological truth, as revealed through excavation and precise measurement, could be subordinated to the demands of a fanciful, picturesque vision of Antiquity where scenic effect was at a premium", p. 76.

62. Fleming, *Ibidem*, p. 183.

63. Fleming, *Ibidem*, pp. 230-231. Robert Adam writes this letter with regard to Piranesi's dedicatory plate to him.

64. Fleming, *Ibidem*, p. 192.

65. Sir John Soane Museum, London, vol. 9, nos. 56 and 60.

66. See Pimentel, António Filipe, "O laboratório da reconstrução: reflexões em torno do pensamento e da prática do urbanismo português" *Propaganda e Poder – Congresso Peninsular de História da Arte* (1999), pp. 347-364.

67. Delaforce, Angela, "The Dream of a young Architect. Robert Adam and a Project for the rebuilding of Lisbon in 1755", *Portugal e o Reino Unido: A Aliança Revisitada* (1994), p. 59.

68. Summerson, John, *Architecture in Britain 1530-1830*, p. 401.

# 4. Pombaline Lisbon, London after the Great Fire and the New Town of Edinburgh

These three town planning situations represent different approaches to the subject of the enlightened city. The rebuilding of Lisbon after the earthquake of 1755, the new London that emerged after 1666, particularly the urbanisation of the West End, and the extension of Edinburgh in the mid-eighteenth century are all manifestations of a town planning attitude, which conform to the main enlightened ideas with regard to the city. In fact, these three examples picture the development of a town planning process that promoted building legislation and standardized architectural schemes in order to achieve a given concept of urban quality. This movement was structured as a reply to specific political, economic and social demands, following, nonetheless, well-defined philosophical precepts. Lisbon, London and Edinburgh developed in the eighteenth century as elucidative examples of this town planning movement and as such will be compared below.

## 4.1 Background and proposals

### 4.1.1 Lisbon[1]

Soon after the earthquake of the 1st November 1755 struck Lisbon, the Portuguese Secretary of War and Foreign Affairs, Sebastião José de Carvalho e Melo, future Prime Minister (1756), Earl of Oeiras (1759) and Marquis of Pombal (1769), appointed the elderly military engineer Manuel da Maia to formulate a project for the reconstruction of Lisbon.

Pombal's ideas with regard to the new city had been maturing for a long time. The experience gathered through his diplomatic appointments in London and Vienna had considerably opened his views on the matter. Also, the close relationship, which Pombal maintained with some *estrangeirados*, helped to keep him updated with the most recent European developments on this subject. Of particular interest are the letters that his friend, Manuel Telles da Silva, wrote from Vienna with regard to the rebuilding of the city (1). In these letters, Telles da Silva refers to some conversations he had with Pombal (at the time of the diplomatic appointment of the latter) in Vienna, just a few years before the earthquake: "I remember that in those serene family discussions, in which we indulged, to me with great utility, some nights, we talked about the city of Lisbon and the development and extension of the city which had occurred before my time and was not of my knowledge; and with the few ideas that Your Excellency had given to me, thinking materially two months ago with the Marquis my brother, through a family letter, I told him, that it

[1] Notes p. 191

seemed according to the royal providence, kindness and equity, preferring always the public convenience, and favouring, when possible, each individual, to order in such manner the forthcoming rebuilding of Lisbon, amending many of the old deformities and inconveniences, mainly in the old neighbourhoods, where the very narrow and winding streets are equally ugly and even health damaging" (2). As we can see, Telles da Silva shows his awareness of the developing town planning ideas and, simultaneously, reveals Pombal's knowledge and interest on this subject.

If baroque Vienna with its circle of *enlightened* individuals was probably the most suitable place for the maturing of Pombal's ideas with regard to the urban and architectural reform of Lisbon, London was certainly an inspiring model. In fact, we can sense Pombal's admiration for the English pragmatic approach to town planning and architecture in his letters from London: "When I left Portugal I recall that a factory that made all sorts of silk upholstery was starting to prosper in Lisbon, whose building, from what I have seen, I can guarantee to Your Excellency is worth a lot more today than all those that exist in London and in its environs. In this country as soon as any artisan has enough capital to buy a weaver's loom with all the engines that go with it and the necessary security to find through credit all the raw materials which he intends to transform by his craft, he has found everything he wants to establish a good manufacture and to get wealthy. None of these men throw away their capital on the purchase of a noble building. Four rotten pine boards make the walls and two dozen of half baked bricks make the roof of a factory in which work several weaver's looms that produce very expensive upholstery, as plain and embroidered, brocade and *tissus*" (3). This passage is particularly revealing of Pombal's emerging ideas with respect to the use of architecture and town planning as a means to develop a specific economic project.

Pombal's relationship with the military engineering in Portugal is also a very important element in the conceiving of his urban strategy. The military engineers' vast experience in the kingdom and, most of all, in the empire, made them Pombal's favourite protagonists with regard to town planning issues. Also, Pombal cherished their pragmatic solutions as they corresponded with his own views on the subject.

The military engineering solutions conformed very well with the enlightened ideas with regard to an urban environment able to interact as a whole. As such, they also conformed with Pombal's understanding of the city, namely with the town planning projects he, apparently, had been nurturing for some time for Lisbon. The specific development of Portuguese military engineering and the maturation of its town planning solutions gave to Pombal not only a reliable body of experts but also a view on the matter which he saw as the most compatible with the Portuguese urban reality and, most of all, with his own plans of urban reform. Pombal used all of this potential, giving, nonetheless, to it a very clear ideological and operational program. Not only in

Lisbon but also in Porto (1757), Vila Real de Sto António (1775) in Algarve and extensively in Brazil, Pombal put into practice his ideas with regard to the city (4).

The wide-ranging attributions and skills of the military engineers which comprised - "(...) the study of the mathematics (...), military defense, the nautical sciences and the foundation of new cities" (5) – gave a definitive imprint to Portuguese military engineering and also equipped the country with a reliable and numerous group of versatile technicians. The close link between nautical and military issues and the political need of measuring, limiting and ordering the territory structured a well-defined approach to town planning. This approach is openly pictured in the spatial layout of the numerous colonial towns founded throughout the Portuguese empire, especially in the urbanization of Brazil from the late seventeenth century (6) (**Illustrations 31, 32 and 33**, p. 105).

In Portugal, the production of architectural treatises was not as significant as the military engineers' experience as architects and town-planners. The *Dissertação* ("Dissertation"), written between December 1755 and February 1756, by the military engineer Manuel da Maia (b. 1672 – d. 1768) in order to plan the rebuilding of Lisbon, is the first consistent theoretical approach to the subject (**Appendix 1**). The *Tratado de Ruação* is probably the most comprehensive Portuguese work known today on town planning in the eighteenth century (7).

The *Dissertação* is a three part document written at the request of Pombal who appointed the old military engineer to conceive a strategy for the rebuilding of the ruined part of Lisbon. The *Tratado de Ruação* was published soon after, mostly in connection with the new town planning projects being carried out at the time in the city of Porto in the North of Portugal (8). The author, José de Figueiredo Seixas, a painter and an architect, was one of the experts working at the *Aula de Riscar* ("Drawing Class") in Porto, which had been recently founded to assist the implementation of the new plans (the same structure was created in Lisbon to prepare and develop the process of rebuilding).

The *Tratado de Ruação* was published in 1760 and, as its title indicates, it develops a town planning theory based on the principle of spatial ordering through the layout of the streets (*ruas*). A reticular composition is structured from a central square expanding itself as a circular plan across a given territory. Seixas's proposal follows Renaissance theoretical principles of order and regularity without taking into account practical issues, as topography, or previous urban structures. As such it divers from the pragmatic solutions developed by the Portuguese military engineers not only in Brazil (**Illustrations 31, 32 and 33**) but also in the rebuilding of downtown Lisbon.

Comparing both approaches, we can nevertheless conclude the following:

- Urban space is always arranged by the regular disposition of the streets, which represent the structuring spatial element:
- The urban grid extends from a central square, emphasizing its symbolical and functional character.

Figueiredo Seixas gives structure to a town planning theory, which is based on the idea that a harmonious urban space ought to be designed as part of a wider territorial project. Thus, towns and cities should be structured in a regular grid covering the whole territory: "the roads which connect the urban settlements to each other should leave the settlement on a straight line with its main and central roads and follow the same straightness until they reach other settlements and enter them on the same straight line with the main roads" (9). He also adds that "there is not a more distasteful thing than leaning and deformed houses" and the streets should opened "in a manner that from everywhere one can see them up to the skyline and be able to have enough space to enjoy its façades" (10). To Figueiredo Seixas, thus, the spatial harmony of a town could only be achieved by regular and spacious streets, allowing the building of regular houses, with regular façades, the view of which could be appreciated throughout the whole street.

In his work, Seixas also develops a rather detailed outlook of architectural solutions. According to Rafael Moreira, to whom we owe the finding of Seixas's treatise: "Rococó and Neoclassicism, poorly assimilated, which are not based on any genuine class or period mentality, intersect ... in his work as an exercise of style, successively inserted on a formal infra-structure which is defined with rigour by the practical subject of drawing" (11). Despite its manifest connection with the architectural movement of the North of Portugal, it can be argued that Seixas's models can be included in the overall Pombaline program. As Rafael Moreira points out: "Is it not in the same scheme of contradictions, perhaps only apparent, that it is conceived, in the Porto of the Almadas as in the Lisbon of Pombal or in the distant Amazonia of Landi, this artificial and synthetic product that is the Pombaline style?" (12). More than the search for a defining *style* or architectural taste, the Pombaline period seems to have aimed for an architectural typology able to conform to a global ordering of urban space following precepts of regularity and functionality. In this assumption, it combined traditional architectural schemes, such as the austere solutions of military engineering, with the developing neo-classic proposals. In this combination, the rococo elements appear as the decorative resource detachable from the architectural frame to which they were added: "The architectural geometric theory expressed in the *Tratado de Ruação* suggest a re-reading of the work built by Seixas in terms of a *Rationalist Rococo*, in which the "fanciful ornaments of architecture", as he likes to say, apply themselves on a straight structure as mere artificial appendages" (13). In Lisbon, as we shall see, this combination of late baroque proposals and the emergent formal vocabulary of neo-classicism are clearly structured on a rational layout of urban space.

The problem of urban commodiousness is also developed in Seixas's work, underlining his enlightened town planning perspective. He articulates his vision of a geometric ordered city space with a number of elements and infrastructures able to improve the quality of urban living: public lightening, identification of each road, demolition of the arcades and covered passages (which he considered to be unaesthetic and dangerous at night: a concern shared by Manuel da Maia and by the majority of the contemporary town-planners), public gardens and a sewerage system.

In spite of the evident ideal character of its proposals, the *Tratado de Ruação* is an interesting perspective on enlightened town planning thought. It combines the Portuguese experience with the main ideas giving structure to the European town planning movement at the time. It is clear in Seixas's text, as it is in other contemporary European town planning treatises (see **Part I – 3.3 The Enlightened City**) that the concept of urban improvement is simultaneously an aesthetic and a utilitarian statement. Seixas expresses this assumption according to a formal spatial and architectural approach, which is built on a rigorous application of mathematics and of geometric elements. This is undoubtedly inherited from the military engineering solutions and procedures. It is exactly this method that underlines all Portuguese early modern town planning from the seventeenth century. The Pombaline period uses extensively this approach according to a wider urban project which can be unquestionably included in the enlightened concept of the city. Seixas and Manuel da Maia's texts represent the best examples of this assertion.

Manuel da Maia's *Dissertação* are three detailed texts underlining not only the several options for the reconstruction of Lisbon but also explaining the procedures that should be put into practice in order to develop the most enterprising proposals (see **Appendix 1**) . These texts were written between December 1755 and April 1756. In the first part, Manuel da Maia considers five options for the rebuilding of Lisbon. In the second part, he examines carefully each option, before designating the solution. Manuel da Maia indicates with precision all of the technical and legal procedures to be carried out: the structure and materials of the buildings, width of the streets, urban sewerage and cleaning system, method of dealing with the property rights, the correct and precise drawing of the new plan and the selection of the architects. The third text is attached to six plans of Lisbon's city centre; a plan of a street divided according to the example of London (with side passages for the pedestrians) and three different façade designs to be used according to the importance of the street location. It is interesting to note that the old military engineer specifically writes his texts as a town planning exercise: carefully considering the different options, balancing the advantages and disadvantages and finally reaching a solution.

Manuel da Maia starts by considering a number of choices with regard not only to the manner but also to the location of the rebuilding. In the first part of his *Dissertação* he presents to King D.José I the following five options:

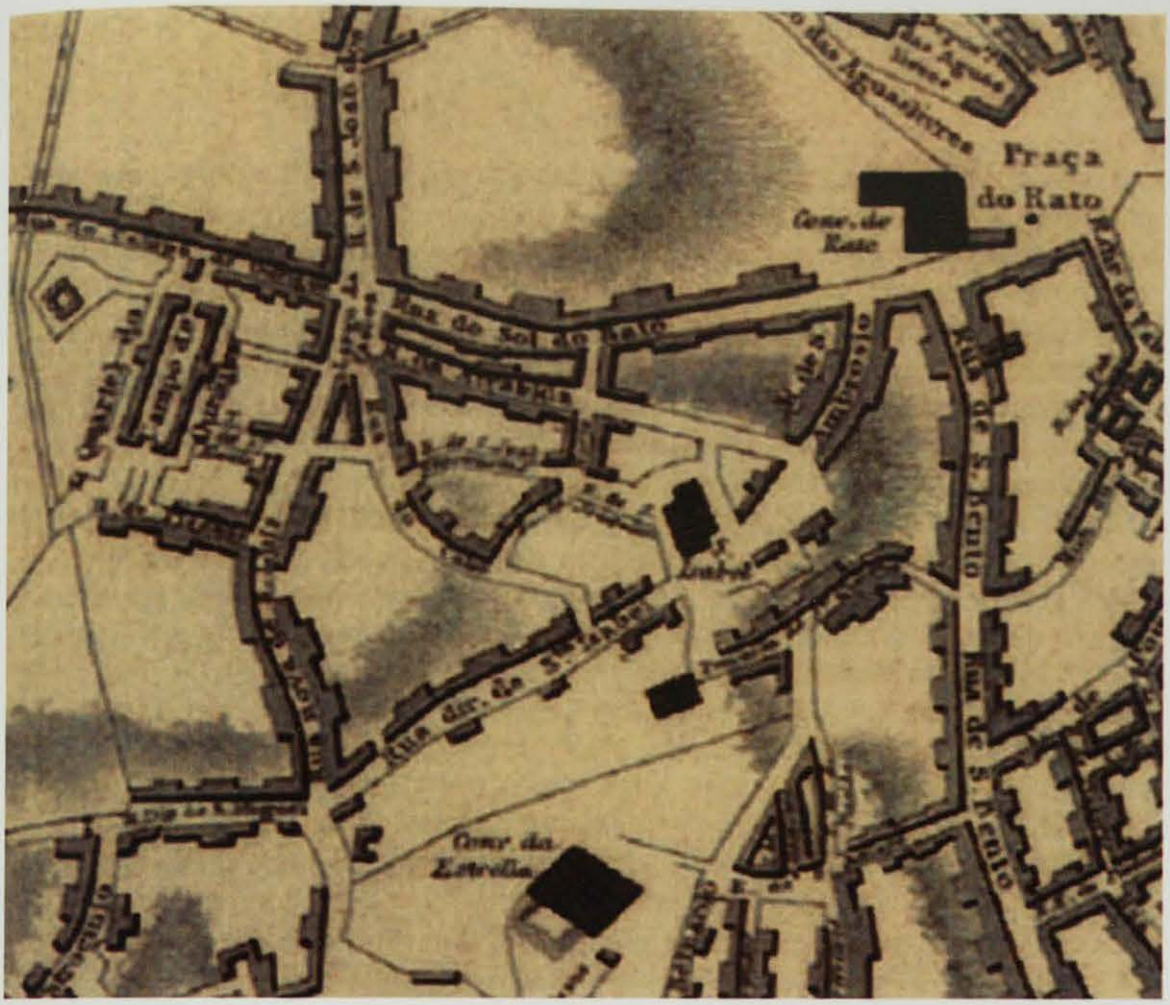
- To rebuild the old city as it was before the earthquake;
- To rebuild according to the previous sequence of buildings whilst enlarging the old streets;
- To carry out option 2, reducing however the height of the buildings to two storeys;
- To rebuild on the old site, using, nevertheless, an entirely new plan;
- To build a new city at the west **(See Appendix 1, pp. 3- 4)**.

From the sixteenth century, there was the idea of developing a new city at the west end of Lisbon. However, the first serious attempt to carry out this project dates from the early eighteenth century (14). The west was undoubtedly the main direction of Lisbon's urban development from the sixteenth century. This area, being more recent, did not feature most of the inconveniences of the old medieval city centre. The possibility of creating a new urban environment outside the confines of the old site was an exciting prospect: in *Belém* (Lisbon's western district) Manuel da Maia envisages the building of a wider city, developing horizontally. When considering this solution, Manuel da Maia also contemplates some practical aspects deriving from the gruesome reality caused by the catastrophe: the vulnerability of the old site to another earthquake and the negative effect of the victim's remains on the stability of the building ground.

Manuel da Maia considers ultimately the rebuilding of the city on the old site as the best option. This decision seems to have resulted from the assumption that the rebuilding of the old city should be done according to a regular plan. This situation is obviously not contemplated in the 5th option for financial and legal reasons. Manuel da Maia is aware of the fact that the old city would have to be rebuilt: "It seems to me indisputable that there is the desire to renew the downtown" (15). In fact, the downtown had been the city centre for more than three hundred years. The downtown's favourable relationship with the rest of the city and the river had strengthened its urban function. Apart from being the location of the old royal palace, it was also the site of the main public buildings, such as the Customs House and the Stock Market, and therefore its properties were valuable. Despite its recent ruin, the proprietors would surely want to rebuild it. The project of a new city to the west would leave the rebuilding of the old city without any type of control. This prospect was, evidently, a cause of apprehension for the experienced military engineer. Thus, in the second part of his *Dissertação*, Manuel da Maia ingeniously tries to recommend to the king the 4th option (**See Appendix 1, pp. 8-10**). First of all, he expresses the view that the location of the new city should be the site of the new royal palace. He suggests, then, an area northwest of the downtown but close enough to demand an urban rearrangement of the destroyed area: the district of *Sta Isabel* (**Illustrations 43a and 43b**). Following this proposal, Manuel da Maia carries on considering the conveniences and inconveniences of the two main options: the rebuilding of the city according to the old layout or to a new plan. Gradually, by listing and pondering the main steps to be taken in order to secure a swift and safe rebuilding, the military engineer presents "the" solution: "as for the three


**43a. Lisbon in the mid-nineteenth century.** Drawn by **William Barnard Clarke.** Published in Branch, Melville C., *An Atlas of Rare City Maps. Comparative Urban-Design, 1830-1842*. New York: Princeton Architectural Press, 1997. Pictures Lisbon in the 1830s. Marked on the plan in green, at the North of the *Rossio*, it can be seen the *Passeio Público*. From this public garden to the river develops the grid that replaced the old city centre. At the East of the downtown we can see the Castle Hill surrounded by the medieval maze of the *Castelo* and *Alfama* districts, which were not severely damaged by the earthquake. The medieval city walls are marked in red. The expansion of the city to the West and the first extensions to the North are also noticeable.

**1. *Sta Isabel*'s District.**




**43b. The district of Sta Isabel in the mid-nineteenth century.** Detail of illustration 43a. At the top, on the right hand side, we can see the *Praça do Rato*, to which converge the *Rua das Águas Livres* (running alongside a section of the Aqueduct and also the location of the *Mãe d'Água Deposit*), to the North, and the *Rua da Fábrica das Sedas*, to the South.

methods of renewing the downtown, I consider as the best and most appropriate, the first, demolishing it all and renewing it all" (16).

The assumption that the site of the new royal palace should decide the location of the new city is, as José-Augusto França stresses, still clearly in connection with the Joanine town planning program: the setting up of the urban space around the location of the royal palace (17). This was essentially a baroque town planning perspective. Nevertheless, in the *Dissertação* there is a noticeable setting out of a series of actions, which relate to a transitional period. Manuel da Maia indicates a course of action, which takes into consideration some essential urban elements (e.g. the royal palace and the numerous city churches) although placing them in an innovative urban layout. In fact, Manuel da Maia's suggestion has, as we shall see, another component which evidently implies an innovative town planning option: the rearrangement of the city main square, the old *Terreiro do Paço* (Palace Courtyard), as the political and commercial centre. In order to develop the 4th plan, Manuel da Maia expresses the conviction that the main square of the old city, facing the river, the *Terreiro do Paço*, where the royal palace had been situated since the early sixteenth century, should now be solely occupied by the main public buildings: "And elected and appointed this place of S. João dos Bemcasados and the convent of N. Sr.ª da Estrela as the site of the new royal palace, it seems to me that we should initiate the renovation of the city of Lisbon with public buildings, which are erected by the royal treasury, as the main source of the royal income is the maritime activities and trades, for which purpose Your Majesty will bequeath the old palace, as the kings your ancestors had bequeathed their palaces which are today used for other functions: An Exchange House could also be established and everything arranged according, not only, to the principles and formalities of what occurs in other Courts but to the improvements that may take place in our country and good reasoning may achieve" (**See Appendix 1, p. 6**) (18). The idea of physically separating the royal residence and the State headquarters had been developing in Europe since the seventeenth century and had its ultimate expression in the building of Versailles by the French king Louis XIV (1643 – 1715, b.1638). However, in Lisbon it seems that rather than making only a political statement, this proposal also had an eminent economic purpose. This idea conforms to Pombal's plans for the reconstruction of Lisbon. He wanted to create an efficient commercial capital city and the old *Terreiro do Paço* was still the best location for the heart of the new city. It is clear in Pombal's decisions that his main aspiration was to express Lisbon's commercial strength by the building of an ordered city centre. The *Praça do Comércio* (Commercial Square) reaffirms this intent and projects in its spatial and architectural dynamic the whole significance of the urban ensemble.

Two major ideas seem to have shaped Manuel da Maia's proposals: first, the planning of a regular and spacious city for the convenience of the citizens; secondly, the observance of strict anti-seismic rules both in the town planning procedures (height of the buildings and width of the streets) and in the structure of the buildings. To this end, the military engineer proposes that the

rubble from the ruins should be used to level and raise the downtown ground; the height of the houses should not be more than two storeys; the width of the streets should conform to the Royal decree of 1745 (not less than twenty five palms for the alleys and the width of the *Rua dos Ourives do Ouro* and *Rua dos Ourives da Prata* for the main streets) and the building material should be mainly stone. With regard to this latter problem, Manuel da Maia expresses his concern about the many newly constructed wooden buildings. He stresses the need for the citizens to regain confidence in stone built architecture in order to prevent fires, another significant urban hazard. In order to give a sustainable practical basis to his town planning ideas, Manuel da Maia devotes a substantial part of his text to the issue of the landowner's rights and interests over the destroyed properties. He is well aware that this inevitable problem could impair the effectiveness and the speed of the rebuilding. Thus, he recommends the royal expropriation of the building ground and the use of experts to act as appraisers for the valuation of the properties. To each landowner should be given a portion of ground of the same value of the ruined property in order to proceed to the rebuilding according to a new plan. The Crown should be responsible for every property not rebuilt by its owner. When explaining the advantages of this system, Manuel da Maia refers to the major importance of the thorough property register being carried out at the time. Not only the destroyed city was being kept in record but also the property rights would be better protected. This enterprise was successfully carried out by the Prime Minister who achieved in Lisbon what London had attempted to develop one hundred years before (19). However, the old military engineer became conscious that the Crown wanted to assign to the private landowners the main financial burden of the reconstruction. Only the public buildings were to be built by the State. In order to attract the private interests, Manuel da Maia suggests that the public buildings should be the first to be erected: "And to beat the fear of lack of buyers for certain areas and of creditors wanting to receive them in return for those they have left, it occurs to me that as all businessmen see as very convenient to have their houses near the Courts on which they rely, should your Majesty begin the renewal of Lisbon (...) by the public buildings (...) and so I am persuaded that with this attraction all those who depend on the referred to tribunals will seek to build in these areas (...)" (**See Appendix 1, pp. 11-12**) (20).

Manuel da Maia's project of a new regular city also considers the articulation between the old and the new Lisbon. The passage referring to this subject is extremely revealing of Manuel da Maia's main ideas regarding town planning and their application to the specific situation of Lisbon: "I mentioned above that each street should maintain its symmetry in doors and windows, as it seemed to me better that each street or each district should have any kind of diversity at least in the colour, rather than having all downtown entirely uniform, even to prevent the other parts of the city looking too dissimilar (...)" (21). The use of some diverse elements on the façades was a means to differentiate the main streets from the secondary ones. As we can see, Manuel da Maia favours some sort of diversity in order to gain a uniform but dynamic global urban setting. The discontinuity between the old and the new was a real problem for Pombal who attempted to extend the new spatial and

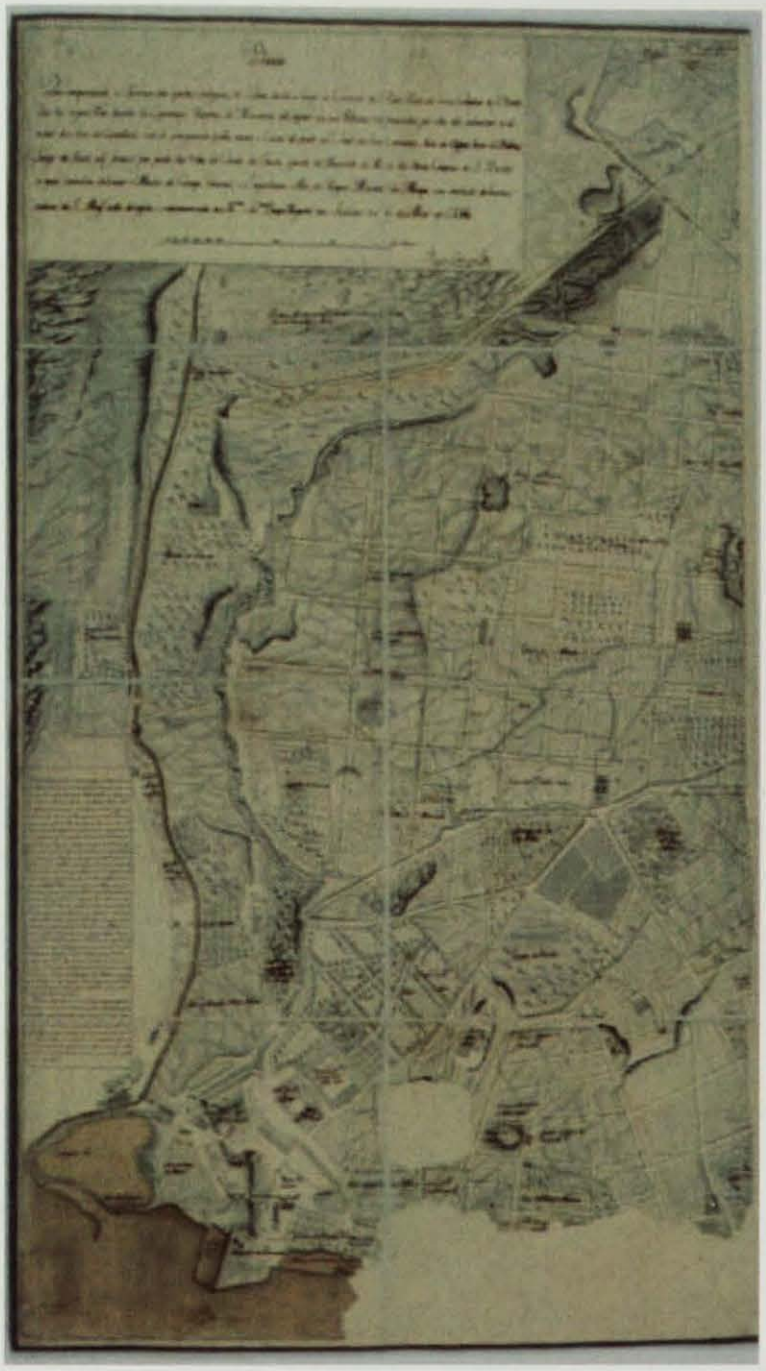
architectural order to other adjacent areas of the city. These plans were drawn but unfortunately were never carried out for financial and legal reasons (22) **(Illustrations 44a, 44b and 45)**.

Throughout this text, Manuel da Maia refers several times to London and Turin as the most recent and noteworthy European examples of town planning. However, he complains about the difficulty he had in obtaining some reliable material on these two situations: Manuel da Maia blames the earthquake and the lack of a much-needed Portuguese Library for these circumstances (**See Appendix 1, pp.18-19**). It is evident that the old military engineer was aware of the major responsibility lying in his hands and he wanted to use other European experiences in order to obtain the most suitable and practicable solution. London was important for its utilitarian approach to town planning and urban issues: the division of the streets in three parts, the sewerage system and the efficiency of the Customs' procedures are the aspects referred to by Manuel da Maia. Turin does not seem to be a very useful example for the military engineer as: "The renovation of the Court of Turin, it was not as some say the demolishing of the old Turin to build the new Turin, since it was simply the linking of the new Turin to the old Turin, making an addition to Turin on a flat adjacent area which was not a difficult task to accomplish; therefore, I conclude that the renewing of the destroyed Lisbon needs a lot more of deliberation than the extension of the added Turin [sic]" (23).

The recognition of the major task ahead of him, led the military engineer to select cautiously the team of experts to work on the formal layout of his project. Therefore, Manuel da Maia directed his choice to Eugénio dos Santos, the city council architect and an experienced military engineer, together with the Hungarian architect Carlos Mardel (Martell Károly, b. 1697 – d. 1763), who came to Portugal c. 1733, and became very familiar with the city council performance in Lisbon: "I cannot avoid adding that special attention must be paid to the election of the people who will be responsible for the execution of the difficult task of renewing Lisbon down town, in order to do it free from the obstructions which can be found, or to include the correspondence between the old and the modern, in the situations where a change is needed from the old to the new, which is where the main difficulty resides; as the building of a new City, without having to consider the existence of another urban structure, linking it to an old one as happened in Turin, will be more amusement than work; to perform this task I believe that the most suitable choices will be the lieutenant-colonel Carlos Mardel and the Captain Eugénio dos Santos de Carvalho, as they are professional engineers and the first architects in the field of civil architecture" (24).

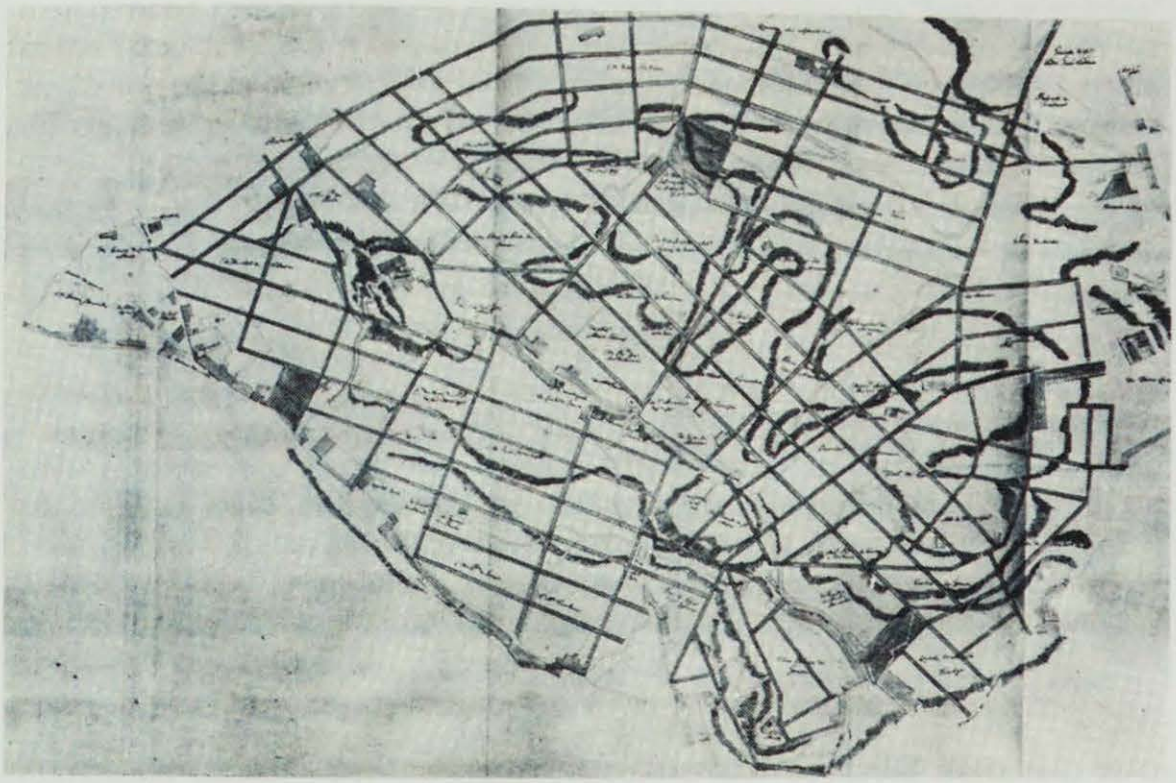
We can sum up the main ideas expressed in the *Dissertação* as following:

- The enforcement of a number of building procedures in order to prevent a similar catastrophe;



**44. a Plano of the area between the *Bairro Alto* (Higher District), *Amoreiras*, *Arco do Carvalhão*, *S. Sebastião* and *Rossio*, Lisbon.** This plan is dated August 11, 1757 and is signed by the following military engineers: Carlos Mardel, Eugénio dos Santos, Elias Sebastião Poppe and António Carlos Andreias. It has also an inscription signed by Manuel da Maia, dated August 23, 1757, instructing the military engineers to direct the checking of the plan on the ground in order to register the required amendments.
Etching (china ink) with watercolour wash.
Dims: 1240x1540 mm.
**MC (Lisbon)**.


**44b. Plan of the *Bairro do Andaluz* (*Andaluz* District), Lisbon (1756).**
Etching (china ink) with watercolour wash.
Dims: 730x1150 mm.
**MC (Lisbon)**.



**45. Plan for the regularisation of the eastern part of Lisbon.**
Not dated. The original was in the **AHMOP** and was lost in 1929.
**Dims**: 740x1190 mm.
**MC (Lisbon)**.

- The reordering of the city centre according to a new and regular plan;
- The financial feasibility of the plan.

Around these three main guidelines, Manuel da Maia gives shape to his idea of a modern city. José-Augusto França, who is the author of the first and only comprehensive study on Pombaline Lisbon written to date, stresses that the experienced military engineer had the merit to conceive the "basic principles" of the rebuilding at a time when the future Marquis of Pombal was only at the beginning of his political career (25). In fact, despite Manuel da Maia's several references to Turin and London, his rebuilding program is above all a product of his "long personal experience" (26). Also, the similarities between the latter and other European town planning examples can mostly be explained by the existence of a widespread conceptual approach "whose utopian origins came from the Italian Renaissance" (27). However, if we are to give the rightful credit to Manuel Telles da Silva's letters and to Pombal's suggestive remarks in his writings from London, it seems evident that the Prime Minister had already some plans for Lisbon. The earthquake made this major task easier to accomplish. Manuel da Maia's considerations and proposals were coincident with Pombal's projects for Lisbon. There was, in fact, a remarkable consonance of ideas between the engineer and the politician. Therefore, as França also agrees, it seems that Pombal not only supported this project but also contributed to the ultimate concept of the city expressed in it: a regular urban structure directed to the "convenience" of the citizens and to the expediency of trade (28).

Pombaline Lisbon was, therefore, conceived and designed according to a very particular and interesting set of factors: the concurrent formal and pragmatic attitude of military engineering and the enlightened perspective of the city as a cultural and social entity.

### 4.1.2 Edinburgh[2]

The building of the New Town of Edinburgh had some things in common with the reconstruction of Lisbon. It seems clear that two main elements concurred for the extension of old Edinburgh:

- The ruinous and overcrowded appearance of the city;
- The aspiration of giving to Edinburgh an architectural and urban dignity that would enhance Scotland's cultural identity and economic prosperity.

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From the late sixteenth century, Edinburgh's urban legislation reveals a city struggling with a growing population within the confines of a medieval precinct. This problem led to a vertical growth of the city. At the eve of the New Town project, buildings reached the astonishing height of ten and eleven storeys (1) (**Illustrations 46 and 47**).

In comparing Edinburgh and Lisbon's building legislation throughout the given period, it seems clear that both cities were struggling with similar problems, which nevertheless sometimes presented themselves and were addressed differently. These dissimilarities were not relevant and can be explained by the specific circumstances of the different locations and cultural and political diverse contexts. Lisbon was the capital city of a kingdom and a large and important empire, which decisively contributed to its early cosmopolitan character. This fact and the extensive experience and relevance of military engineering in the country, gave to the history of Lisbon an early and systematic approach to town planning issues. Also, Lisbon had the advantage of being washed by a river and of the vicinity of the sea and its topographic layout allowed its extension alongside the river to the west. These circumstances permitted an apparent easiness of solutions with regard to urban cleaning and overall healthfulness. Moreover, the generalized fear of fires was more felt in the Northern European cities where wood was the principal building material. However, Lisbon was far from being a clean and spacious city and the urban legislation often refers to the enforcement of the use of stone for safety reasons. Overall, it is very easy to trace a similar pattern of evolution with regard to the building legislation between these two urban examples. This fact reveals both a similar process of urban development and of town planning thought.

In both situations, as happened throughout Europe, the city administrative entities and the political power were forced to adapt and to try to regulate an urban development which could not be contained by a mere restrictive building policy. The comparative study of these two urban situations requires an accurate reading of the political and social significance of the building and urban measures that were present. In other words, with regard to the development of the town planning thought, it is important to consider the relationship between the city administrative daily recurrent actions and the more wide-ranging projects.

In the sixteenth century, Lisbon as the capital city of an emerging empire had, evidently, a more eventful town planning history than Edinburgh. However, the development of the city council town planning strategy in both situations is very similar: slowly, from an initial apprehension with the local impact of the new buildings there is a growing concern with more general urban issues. In both cases, the seventeenth century marks the beginning of the issuing of legislation considering stricter buildings procedures and the urgent reform of urban infrastructures: such as quality of the materials, prevention from obtrusive façades, city lighting and sanitary measures, including city cleaning

**46. Edinburgh – Plan of the Old Town (18th century)**. Published in Youngson, A.J., *The Making of Classical Edinburgh (1750-1840)*. Edinburgh: Edinburgh University Press, 1993.

**47. A view of the Old Fishmarket Close, Edinburgh (early 19th century)**. It shows the cramped and ruinous aspect of the old Town. Published in Youngson, A. J., *op. cit.*

and water supply: "Considerable rebuilding of tenements of lands or houses was accomplished in Edinburgh in the last quarter of the seventeenth century which swept away the Town's mediaeval aspect and introduced uniformity in design much as is in evidence to-day in the Old Town" (2). This author also refers to the progressive enforcement of the use of more resistant building materials, control over ruinous proprieties and some façade uniformity in the central areas. This latter issue, which progressively acquired a crucial importance in the largest European cities, seems to have been addressed more efficiently, at least at a planning level, in the second half of the seventeenth century. In Lisbon, attempts to regulate the building in central or new areas according to a minimum of formal rules were, nevertheless, not always followed (Manuel da Maia refers to this situation in his *Dissertação*). The legal enforcement of the urban legislation was, with the scarcity of financial means, a constant and serious problem for city administrations throughout early modern Europe.

In Edinburgh, a fire incident in 1674 triggered the first town council plan aiming for the architectural and spatial uniformity of central Edinburgh: "A dispute between the heritors who suffered loss in the fire at Todrig's Wynd caused the whole Council and deacons of crafts to visit the ground on 16th November 1674 and hear all complaints on the spot, and as a result they recommended that the tenements fronting the High Street should be built of equal height, in a straight line, with windows at the same level, and supported on pillars and arches" (3). Other incidents evidenced that, in these circumstances, Edinburgh city council was able to put into practice its ideas concerning the materials and the design of the façades (4). It was a task requiring a slow but steady approach given the legal and financial restraints obviously impairing wider projects (the enlargement of two of the main streets in Lisbon, at the time, was only possible by a royal enforcement of the projects). The awareness of this situation led to the Act of Parliament of 1698 establishing for the first time a number of building norms for the whole city. This document is extremely revealing of the Parliament's and city council's conscious perspective on the condition of Edinburgh's urban structures. Also, it expresses the conviction that only by a legal enforcement of some precise building measures for the whole city, could some betterment of Edinburgh's urban structure and city life be achieved: "Our Sovereign Lord considering that the new buildings in the City of Edinburgh having been built without any settled rule of particular oversight, severall of the houses are built to excessive incommodious & dangerous height and all of them very slight and insufficient whereby not only by the policy and good neighbourhood of the Town is prejudiced but also in case of fire happening, all acess for staying or extinguishing the same is so difficult that it may prove dangerous to the whole town. For Remeid whereof and for the better ordering and regulating of all new buildings within the city of Edinburgh in all time coming, His Majestie with advice and counsel of the Estates of Parliament, Statutes and ordinances that in the building of any new houses or lands within the city and suburbs these rules shall be observed (...)" (5). These rules were mainly directed to the prevention of fire by increasing the thickness of the walls, reducing the use of wood, imposing safety measures in the construction of chimneys and

diminishing the height of the buildings to no more than five storeys. Having apparently only a safety purpose, these norms presupposed and applied a global uniformity of construction. This was clearly seen, and was referred to as such in the Act, as a means to achieve urban improvement. With regard to the present study, the importance of the evolution of the urban legislation throughout the seventeenth century in Edinburgh obviously lies in the fact that it consistently proves that the eighteenth century building enterprises were conceived and planned according to a long process of dealing with urban issues. Enlightenment thought added to these urban projects a strong ideological character.

As referred to above, in late seventeenth-century Europe there was steady progress towards wide ranging urban planning. The control of private building by legal enforcement of a number of building rules was simultaneously the crucial and the most difficult goal. Obviously, the development of ideas about the improvement of the urban environment by means of a more regular and dignified architectural structure contributed decisively to this project. In the case of Edinburgh, public utility seemed to be the main structuring guideline, which at the dawn of the early eighteenth century began to be understood as the other face of a dignified architectural renewal. The pragmatism of a century of urban legislation trying to minimize the dangerous effects of an uncontrolled urbanization paved the way for a more comprehensive urban project, which looked at the city as the mirror of a given society. We can consider the ensemble of attempts and texts aiming for a New Edinburgh produced in the first half of the seventeen hundreds as part of this project: "the inhabitants of Edinburgh, (...) were beginning to feel acutely the inconvenience of their cramped existence, of the lack of public buildings and of the general unhealthiness of their surroundings. Also national pride appears at last to have become sensitive to the state of the capital, and plans for its improvement received much-needed impetus from the introduction of persons not directly concerned in the government of Edinburgh" (6). Marguerite Wood stresses, however, that this concern had been felt since the early seventeenth century: "Since the time of Charles I when the duty on ale had first been granted to the Town the revenue from that source had been allocated to two purposes, the redemption of the Town's debt and the erection of public buildings, (...)" (7).

A series of events marked the development of the process which led to the building of the New Town: in 1687, King James II of England (1685 -1701, b. 1633) supported the project of a new bridge as a means to expand the city; an Act of Parliament in 1723 considers the drainage of the North Loch and five years later, John Erskine (b. 1675 – d. 1732), 6$^{th}$ Earl of Mar, issued his famous pamphlet suggesting the expansion of the city northward. Nevertheless, the opposition in Scotland to the Act of Union (1707) with England, which ended Scotland's political autonomy, reinforced by the Jacobite rebellion and the subsequent financial problems delayed the progress of these projects. Although political and financial stability was necessary for the good outcome of the project, the existence of a clear

conceptual program was crucial. As in Lisbon, the eighteenth century philosophical context influenced ideas and gave the project not only a structured conceptual formulation but also an extensive practical dimension.

In fact, it seems unquestionable that the process for the extension of Edinburgh was ultimately linked to the emerging enlightened thought and its particular and significant expression in Scotland. The "Union Act" and its political repercussions, on a society aiming for a more active and prestigious role, not only in Britain but also in Europe, demanded a renewal of the Scottish urban panorama. Edinburgh led, obviously, this process. The building of the New Town should be understood in this context. Thus, pragmatism and ideology gave shape to an urban project that ultimately aimed for more than a mere extension of the city. In fact, if we carefully analyze all of these historical components we perceive in the whole process of Edinburgh's extension to the North the determination to pave the way to a given idea of the city. More than the rebirth of Edinburgh's ancient prestige as a capital and commercial city, there was the idea of rendering it to a level never obtained. In this quest, London was obviously the model.

From the Earl of Mar's early suggestions for the expansion and improvement of Edinburgh to James Craig's plan, we can outline a coherent and steady movement of ideas. The visionary proposal of the Earl of Mar was the first structured expression of the cultured society's ideas with regard to Edinburgh's urban debilities. In fact, there is in his proposal a brief but acute appreciation of the most urgently needed reforms: the expansion to the North (as the most suitable location), to which was linked the building of a bridge over the North Loch; the building of another bridge to the South and the linking of the rivers Forth and Clyde in order to improve the healthfulness of the city and the long distance trade itinerary not only in Scotland but in the whole of Britain. This proposal clearly presupposes a previous work of conceptual and practical planning, as the Earl of Mar, himself, lets us know with regard to the opening of the canal: "It is practicable, as Mr. Adair, Mr. Smith, Mr. Mcgill, and Mr. Sorocold judged, who traveled twice over the ground, with a view to this work" (8). Approximately one year before, Defoe wrote the following with regard to Edinburgh: "By this means the City suffers infinite disadvantages, and lies under such scandalous inconveniences as are, by its enemies made a subject of scorn and reproach; as if the people were not willing to live sweet and clean as other nations, but delighted in Stench and Nastiness, whereas, were any other People to live under the same management, I mean as well of a rocky and mountainous Situation, throng'd buildings, from seven to ten or twelve storeys high, a scarcity of water, and that little they have to be had, and to the uppermost lodgings, far to fetch; we should have a London or a Bristol as dirty as Edinburgh, and, perhaps, less able to make their Dwelling tolerable, at least in so narrow a compass; for tho' many Cities have more people in them, yet, I believe, this may be said with Truth, that in no city in the World live in so little Room as Edinburgh" (9). However, it was not until the 1750's that this situation received a serious attention from Edinburgh's town council.

The crude fact of the cramped urban situation of Edinburgh and its damaging effect on the building structure of the city became widespread news in 1752 with the sudden fall of part of a dwelling. This was the much-needed excuse for the enlightened society to promote its idea of the city: it emerged as the *Proposals for Carrying on certain Public works in the City of Edinburgh* (10). The first considerations of the *Proposals* are clearly directed to a well-defined concept of a capital city: "Among the several causes to which the prosperity of a nation may be ascribed, the situation, conveniency, and beauty of its capital are surely not the least considerable. A capital where these circumstances happen fortunately to concur, should naturally become the centre of trade and commerce, of learning and the arts, of politeness, and of refinement of every kind" (11). If Rome is the "ideal city" or, which is more accurate, the idealised city, London is the model to be followed (although, the examples of Turin and Berlin are also considered), as it was for many of the European town planning enlightened theorists; not only because of its urban excellence but also for its prominent role in the economic and cultural European panorama. From the second half of the seventeenth century, London represents, despite its lack of a general plan, the urban situation closest to the enlightened concept of the city: "Of this general assertion the city of LONDON affords the most striking example. Upon the most superficial view, we cannot fail to remark its healthful, unconfined situation ...No less obvious are the neatness and accommodation of its private houses; the beauty and convenience of its numerous streets and open squares, of its buildings and bridges, its large parks and extensive walks (...) When we survey this mighty concourse of people, whom business, ambition, curiosity, or the love of pleasure, has assembled within so narrow a compass, we need no longer be astonished at the spirit of industry and improvement, which taking its rise in the city of LONDON, has at length spread over the greatest part of SOUTH BRITAIN, animating every art and profession, and inspiring the whole people with the greatest ardour and inspiration" (12). The enlightened Edinburgh society was aware that the physical appearance and expediency of the city was vital to the implementation of a given economic and cultural project: the same perspective was directing the rebuilding of Lisbon. Following this presupposition: "Provost Drummond determined that the new Edinburgh should be modelled upon the metropolis and play a similar role in North Britain" (13).

In Edinburgh, the *Proposals* are the ultimate expression of a movement, which cannot be only linked to the Scottish experience. It unquestionably also reflects a more global process of town planning experiences and philosophical thought.

The legal and technical procedures carried out by the city council, with the relevant and crucial direction and support of Edinburgh's Provost, George Drummond, were directed to the feasibility of a project which, as already mentioned, saw further than the mere extension of the city. The main restraints to this project were obviously linked to the ancient privileges of the burgesses and the financial burden and risk that the building of the New Town

would represent for a legally protected trade and landowner society. The reaction of the most conservative fringe of citizens, as expressed in the *Proposals for extending the Limits of the City of Edinburgh, Impartially considered* (1759), overall reflected the above situation: "But then, on the other Hand, let us consider what valuable consideration is to be paid for all these Benefits: The poor Artificer, who can at present work in his own cottage, upon Payment of a small rent to his landlord, must pay twenty shillings for his Freedom, otherwise must remove from His Habitation: The land-holder, who now pays a proportion of the lets of the county, must then pay an additional lets for every House he shall build upon his land after the Date of the Act (...). And there is one other Inconvenience which may happen to the City, not yet mentioned: If, from the sanguine Expectations of the Gentlemen who have the Government of the City, of the great Increase of revenue to arise from the extension, they shall be induced to lay out large sums in building the Bridge, paving the streets, and other necessary Works in the New City, and the Funds shall fall short of their Expectations, it will greatly add to the Debt of the City, and thereby considerably increase the annual Expence, by Payment of a large sum of Interest". As a city council project, the extension of Edinburgh faced a vital problem: financial viability. It is important to retain this factor as it is inextricably linked to the conceptual program of the New Town and its implementation.

The extension to the North was cherished since the late seventeenth century and the city council acquired some lands in the area in 1716. Property rights in the area to the South of Edinburgh would conceptually displace an urbanisation project as it would give (as it did) to the private initiative the leading role in the process. Therefore, the North was the best option taking into account the city council purposes.

Let us analyze in detail those purposes. The new residential area is planned to receive the cultured and commercial society. However, there is clearly a subjacent will to this project: the improvement of the city's image by the addition of a new area built according to precepts of spatial and architectural regularity and spaciousness. The physical social division of Edinburgh's society was viewed as an essential means to obtain the so-desired centre of "politeness and of refinement of every kind" and also would contribute, by the quality of the planning and the architecture, to the "convenience" and "beauty" of the city: "Every person, whose recollection extends but a few years past must be sensible of a very striking difference in the external appearance of Edinburgh, and also in the mode of living, trade and manners of the people" (14). Scottish polite society aimed to place Edinburgh at the level of the major European cities. For some, it was a response to the loss of its parliamentary autonomy, for others the obvious outcome of a joined political and economic new venture: "The little detail of an established commerce, may ingross the attention of the merchant; but it is in prosecution of greater objects, that the leading men of a country ought to exert their power and influence. And what greater object can be presented to their view, than that of enlarging, beautifying, and improving the capital of their native country? What can

redound more to their own honour? What prove more beneficial to SCOTLAND, and by consequence to UNITED BRITAIN" (*Proposals*).

The model to follow was unquestionably the enlightened city as seen by Voltaire in his *Lettres Philosophiques*: the mirror of a society based on the progressive and dynamic impulse of commerce, free from political restrictions, and to which is given a spatial and architectural ordering favourable to the improvement and prosperity of the cultured and enterprising citizens.

Comparing the *Dissertação*... and the *Proposals* ... of 1752 it is unquestionable that both texts intend to produce coherent urban structures with a predetermined economic, social and cultural significance. Nevertheless, the different contexts where they were produced and the diverse expertise of the respective authors, gave to each distinct formulations: the *Proposals* is mainly an ideological statement whereas the *Dissertação* express its conceptual views through a meticulous technical list of possible urban formulations. In the background of these two documents there is not only a history of attempts for urban renovation and modernisation in both cities but also the legacy of European town planning thought.

### 4.1.3 London[3]

Finally we come to the ultimate model: London. This city did not have the benefit, as did Bath, of a wide green field site open to the most daring architectural and planning exercises. The rebuilding of the city of London and the expansion to the west were restricted by administrative rules and property interests. However, the development of the West End represents the main focus of contemporary enthusiastic references to London. From the eighteenth century, this capital city is frequently praised for its urban commodiousness. From this point of view, it surpassed Rome and Paris, despite their architectural notability and their productive artistic and cultural panorama. More than a spatial and architectural archetypal, London expressed better than any other contemporary city the effectiveness of the enlightened idea of the city. In other words, London was the most definitive example of an operative connection between urbanisation, economic development and social improvement. Ideology and taste were part of an equation, which was definitely conceived as a means to give structure to a society oriented by profit (1).

As a town planning example, the history of London was decisively influenced by the fact that it had grown to be a major capital city, concentrating simultaneously the political and economic centres of the kingdom and its

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empire. In both a national and European context, London's progressive control over the long-distance trade was a determinant factor for the remarkable development of the city from the late sixteenth century. As Roy Porter asserts, there were not many other examples of this situation in Europe: "London's combination of economic and political pre-eminence was uncommon in ancien régime Europe, for capital and commercial cities rarely coincided - witness Valladolid, Madrid and Seville, or Paris, Lyon and Bordeaux" (2). Lisbon represented unquestionably a similar example, as it was the political and the economic heart of the Portuguese empire. Adam Smith acknowledged this fact and stated: "London, Lisbon, and Copenhagen, are, perhaps, the only three cities in Europe which are both the constant residence of a court, and at the same time can be considered as trading cities, or as cities which trade not only for their own consumption, but for that of other cities and countries" (3). With regard to London's development from the late sixteenth century, F.J. Fisher presents a thorough analysis of this phenomenon and compares it to Botero's views on the development of large urban centres: "For the city and its suburbs had a second function. Not only did they constitute a centre of production where substantial incomes were earned from industry and trade; they were also a centre of consumption where men expended the revenues which they had acquired elsewhere" (4). Fisher points out the factors which coincided to produce this situation. First and foremost, the establishment of the seat of government in Westminster attracted the nobility and rendered London a prestigious social centre. This fact stimulated trade and financial activities and had a significant impact on the land market. Merchants, financiers and a range of new professions, connected to the emerging political and judicial systems, gave structure to a numerous and active new social group. The aristocracy was not kept apart from this process: on the contrary, it played an active part in social and economic development. The society which emerged from all of these structural changes set up new educational and cultural institutions. City life reflected this reality, namely by the building of prestigious residential quarters and of leisure centres outside the restrictive Court environment. London became, therefore, a major example of a capital-city concentrating all of the main attributions and activities of a modern city (5).

The cities of London and Westminster (to which was later added the district of Southwark) held this position in England up until the Great Fire of London paved the way to the urbanisation of the western outskirts. The medieval separation between the cities of London and Westminster and the suburban area, later incorporated in the Greater London Council, survived in the complex maze of local administration. However, it is clear that London, as a whole, grew from the seventeenth century onwards as a unique economic, social and cultural centre and as such projected its image and influence outside its physical boundaries: "In strict language, London is still confined to its walls, and the limits of the corporate jurisdiction of the city; but as a contiguity of buildings has connected it with Westminster and all the neighbouring villages and hamlets, the name in common usage has extended over them all, and rendered their respective proper names no more than subdivisions of one great metropolis. In this general view therefore, London

may now be said to include two cities, one borough, and forty six antient villages ..." (6).

From the seventeenth century, London represented in Europe the capital city of Parliamentarianism, economic private initiative and cultural affirmation of new social values. This was what was pictured by Voltaire and most of the European enlightened thinkers. However, it did not have the magnificent town planning architectural and spatial settings of the Parisian places royales and of the monumental projects developed in the most glittering capital city of enlightened despotism, Saint Petersburg. Even in Great Britain, the early eighteenth century example of Bath was a detractor of London's town planning qualities. Also, the fast expansion of the city from the second half of the seventeenth century, created mix feelings about London's urban extension and its relationship with economic evolution: "Unease about what seemed to be uncontrollable growth of the metropolis sprang not only from legal and environmental concerns, but was linked to a broader debate about the growth of trade and consumption" (7). These were the main arguments of London's critics (8).

Given these circumstances, how did a city, which grew considerably and without any efficient control outside its boundaries from the early fifteenth century, and which was rebuilt after 1666 without any global plan, become a major town planning reference in early modern Europe?

The answer lies in the articulation of the traditional and the new, in the almost "natural" process that privileging the private interests ultimately led to an urban solution that favoured an avant-garde global economic, social and cultural project. The process was, obviously, not linear and able to be pictured as a single ideological and technical venture. It developed according to a national historical process that had its own vicissitudes and was part of a wider historical context: Europe.

It seems unquestionable that the Tudor sovereignty reinforced the role of London as the capital city and promoted its pre-eminence in England. The resulting urban tensions were addressed mainly by the issuing of legal documents preventing the growth of the built area inside the walled town and its overcrowding by uncontrolled letting of already inhabited houses. Queen Elizabeth's proclamation of 1580 is clearly, as the document mentions, a result of the city administration's apprehensions with regard to the prevention of fires, plagues and criminality. Although the restrictive building regulations persisted well into the seventeenth century, they reflected mainly a medieval town planning precept: the preserving of the town's urban structure inside its walls in order to safeguard not only the safety of the inhabitants but also the citizen's privileges. This latter aspect had an important bearing on the structuring of these legal dispositions. With regard to this subject Knowles states that: "When, however, the early colonies of buildings appeared on the

outskirts and throngs of people, struggling to obtain a livelihood, gathered therein, the City Guilds looked with strong disfavour on these newcomers" (9). Queen Elizabeth extended these building restrictions to the whole of England: "For the avoiding of the great inconvenience which are found by experience to grow by the erecting and building of great numbers and multitudes of cottages which are daily more and more increased in many parts of this realm" (10). As Knowles stresses, this town planning strategy was directed to the most deprived inhabitants as the latter document included a series of exemptions for the upper classes. The nature of the documents and their application are the reflection of a transitional period. The restrictions could not conform to the fast increase of the city and led, inexorably, to the proliferation of speculative and poor quality building. The constant friction between the royal and council legal determinations and the building process was often used as a means of financial resource for the Crown. On the one hand, these dispositions were frequently ignored in order to favour major private projects in return for monetary compensations; on the other hand, the constant evasion of the established building rules provided a steady influx of legal fines. The control over the urban scenario was mainly kept within the boundaries of a medieval social approach. However, in order to achieve that purpose there was the awareness of the need to implement a global management of the urbanisation.

With James I (1603 – 1625, b. 1566) and Charles I (1625 – 1649, b. 1600), England reached the peak of a process which would however develop and prevail in most of Europe for more than a century: the centralization of political power. This short-lived historical trend in England was contemporary to its emergence in Europe. The Stuarts' contribution to London's architectural and town planning history has to be seen within this overall context. James I' s town planning legislation and architectural program for London represent the beginning of a process that looked at the capital city as a fundamental tool for a given political project (11). In fact, the Stuart period clearly emphasises the political character of town planning measures: James I's ultimate aim was the physical representation of his absolutist political project. His urban legislation and architectural ventures primarily searched for a more dignified architectural character for London. In his famous decree of 1615, King James plainly reveals this intent by establishing a parallel between London and classical Rome: "Wee could desire and wish, according to Our former Proclamation and Ordinances touching Brick-buildings, that as it was said by the first Emperor of Rome, that he found the Citie of Rome of Bricks, and left it of Marble, So that Wee whom God hath honoured to be the first King of Great Britain, might be able to say in some proportion, That Wee hath found Our Citie and Suburbs of London of Sticks, and left them of Bricks being a Meteriall farre more durable, safe from fire, beautiful and magnificent" (12).

To understand the connection between the development of town planning thought and its architectural creation in the Stuart period it is essential to analyse both the building legislation and the royal and private architectural and urban projects. The former simultaneously expressed medieval and early

modern city administrative concerns; the latter were consonant with political, economic and social projects, which crucially contributed for the structuring of new spatial and architectural precepts.

In the Stuart period the fascination with Italian culture is obviously linked to an ideological project, which envisaged the capital city as the privileged field for the physical representation of the political power's new attributes. In "Lost Cities and Standing Stones", Vaughan Hart analyses this subject: "Hence the Stuart monarchy intended to celebrate the imposition of their rule on the medieval institutions in the city through a series of ordered façades mostly applied to existing buildings fronting a traditional route. These new façades would have permanently embodied the solar theme of the Triumph in radiating the harmony of Stuart rule through their ideal proportions" (13). According to this author, Stuart London should be understood within the framework of the Renaissance ideological and formal architectural and town planning proposals. Hart analyses King James' triumphal entry in London in 1604 as the paradigm of this assertion: "As in the masque, the sacred nature of monarchy found expression in these festivals through the king's particular identification with the sun and the star's triumphant journey across his "heavenly city" (14). Robert Tavernor shares the same opinion and interestingly emphasizes the influence of the court of Philip II (1556 – 1598, b. 1527) and Philip III of Spain (1598 – 1621, b. 1578) on King James's projects for London (15). The paradigmatic character of the Imperial Spanish Crown at the time, which merged under its rule the temporal and the religious powers, mainly explains this attraction. The emergence of absolutist power was defining a new framework for social interaction. As mentioned above, this aspect had a considerable impact on the physical image of the cities, namely the capital-cities. This process combined Renaissance architectural taste with early baroque town planning formulas. The Spanish Royal architectural projects, particularly the building of the Escorial (1562 – 1584) in the outskirts of Madrid, reflected this reality and so did the late sixteenth-century town planning ventures in Rome.

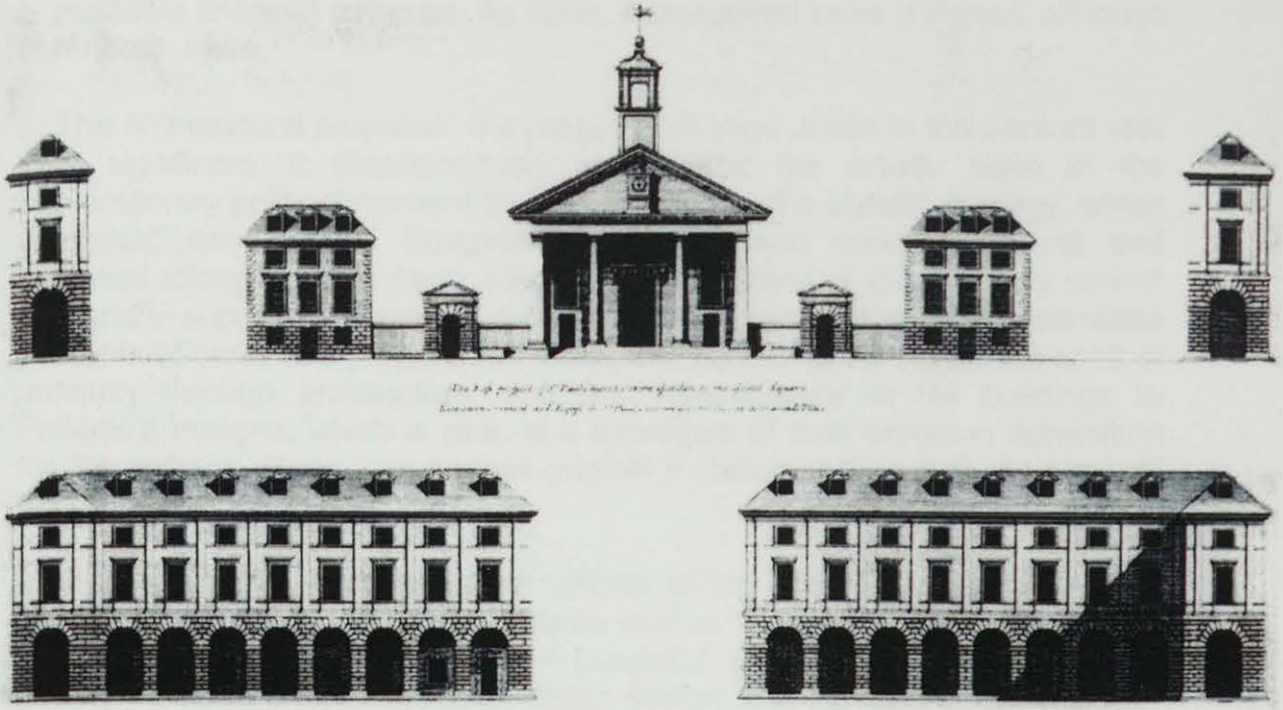
The Renaissance royal entries, as emphasized by Kubler: "were generally celebrated as meetings between the city and the monarchy in a fête bourgeoisie which was paid for by the townspeople, who hoped more or less indistinctly for royal favors in return for their hospitality" (16). In the Netherlands, these ceremonies were particularly significant and their architectural settings had a European impact (17). However, early seventeenth century royal entries cannot be solely viewed under a Renaissance ideological perspective: progressively they tend to be the most expressive representation of the rising political absolutism and as such they project in the ephemeral architectural display the new relationship between the capital city and its monarch. From this period, the Renaissance conceptual approach to the character and exercise of political power is used and redefined according to the consolidation of the national States and their absolutist rulers. By way of illustration, the parallel established between the Platonic image of the sun as the representation of knowledge and the divine

and omnipotent character of the monarch is extensively employed in the baroque period. Despite the Renaissance Italian and Dutch influence, King James I's entry into London expresses already this ideological program.

In fact, if we consider James I and Charles I's urban strategies we are directly confronted with a familiar situation in contemporary Europe: on the one hand, there is the attraction for the rigour and proportion of classical architecture (reinvented in England through a Palladian inspiration) as a means to express a political and cultural project; on the other hand, there is unquestionably an evolving awareness of the need to address globally the city as a social entity. Both perspectives are physically expressed by schemes of architectural staging and global building measures. This occurs in England at a time when the Crown and the court aspired to express themselves as the leading group of a changing society. Italy represented the core of the new philosophical and artistic trend and as such represented a model to follow in the quest for an improved society: "Taste in architecture reached London about 1615. (...) Taste was a luxury import from abroad, received and cherished by a small group of noblemen and artists whose setting was the unspectacular palaces of James I "(18). Inigo Jones (b. 1573 – d. 1652), the architect with an Italian artistic education, was the chosen creator of this architectural staging. Jones's architectural vocabulary incorporated an ideological statement and as such was promoted by the Crown. Jones's works complied with the idea of a given historical standard according to the criteria of a European reformed society: "The result was what has been called the Britannic myth. The myth was that Britain had its own sound classical tradition. This had been obscured by the invasion of the Goths and by Gothic architecture, but with the right kind of dedication it could be revealed again" (19).

The strategy carried out suggested already a baroque town planning approach. The attention was directed to significant architectural units rather than to the reordering of the urban layout: "Indeed, it was exactly this policy of only rebuilding or refacing key monuments, rather than wholesale demolition, which the Stuarts adopted in their attempts to re-establish medieval London as the capital of the reformed British Church" (20). The recent example of Rome cannot be disregarded in this architectural program. The building of the Banqueting Hall (Inigo Jones - 1622) and the re-structuring of St. Paul's cathedral (Inigo Jones - 1634) are manifest examples of this urban scheme, which although never fully accomplished revealed a structured town planning program of works. Despite the maintenance of building restrictions and the dominant concern with safety, there is also the issuing of urban legislation suggesting the demand for a more dignified architectural and urban image for the capital city: e.g. the proclamations of 1625 and 1630 (**Appendix 2**) (21).

In this context, Covent Garden (c.1631) appears as the first urban project and as the work of a private landowner, Francis Russell (b. 1593 – d. 1641), the 4th Earl of Bedford (**Illustration 48**). Covent Garden was a consistent attempt to give structure to a political and a social enterprise that ultimately envisaged



**48. Covent Garden Piazza, London (begun 1630)**. From Vitruvius Britannicus, vol, 2 (1717).


**49. The city of London before the Great Fire**. Originally from - Norden, John, *Speculum Britanniae* (1593). Published in Norden, John, *Norden's maps of London and Westminster/engraved by Pieter van den Keere, 1593*. Nº 7.London: London Topographical Society, 1899.

a profitable financial outcome. As such, it comprised three different, although correlated, traits:

**1.** The architectural proposal: the presence of Inigo Jones in this venture was very significant. It simultaneously represented the artistic taste of the contemporary political moment and the beginning of a stylistic strategy, which combined demands of European integration and national cultural and technical idiosyncrasies. Inigo Jones's works pretended to physically project England's supposed classical cultural heritage according to Renaissance precepts of order and proportion: "Jones was concerned to revive the spirit of antiquity through architecture, and any resemblance in his buildings to Palladio's designs, which is rare, is a byproduct of their common admiration for the antique. Jones was no less original a classicist than Palladio himself" (22).

**2.** The innovative combination of efforts of the different building agents. Summerson indicates three accountable entities: "Charles I, with his fine taste and would-be autocratic control of London's architecture; Jones with his perfectly mature understanding of Italian design; and the Earl of Bedford with his business-like aptitude for speculative building" (23). King Charles I authorized the development of a new urban project, clearly opposing the legal restrictions regarding the building of new tenements in the city, on the grounds of urban and architectural quality; the investor, the Earl of Bedford, pretended a functional and low costing solution; Inigo Jones developed a scheme combining European innovative urban and architectural solutions within the aesthetical and practical established parameters (24).

**3.** The town planning concept of the London residential square. More than an early and distinct example, Covent Garden served as a model: "(...) the two buildings schemes centred round Bloosmbury and St. James's Squares (...) firmly established two important new principles of urban development: the presence of the landlord's own house in the square (this had already been seen in the Covent Garden piazza), and the principle of a complete unit of development, comprising square, secondary streets, markets and even a church" (25). This town planning principle, as described by Rudé, is already present in Covent Garden as Francis Sheppard emphasizes: "Paradoxically it was from the incoherent suburbs of the early seventeenth century that there emerged the prototype of what was to become London's distinctive tradition of residential town planning. This was the great nobleman's estate, laid out as quasi-self-contained and sometimes almost secluded community ranged around a central rectangular open space" (26).

Ultimately, Covent Garden represents the end and the beginning of an era: on one hand, its regular layout and classical architectural design clearly expressed a symbolic representation of a political and ideological urban project; on the other hand, it was developed outside the boundaries of the city, envisaging the articulation between a particular scheme of urban expansion and financial profit. Interestingly, the two mentioned aspects were later used in the development of the West End following social and financial

demands.

In conclusion, the Stuarts' architectural and town planning program up until the Civil War had unquestionably a clear political character. The latter was physically expressed through the use of classical principles of urban quality: order and proportion. Inigo Jones's Palladian schemes served these proposes well. However, there was also the understanding that London's urban development crucially depended on private initiative and on the social demands of the emerging economic order.

Summerson states that after the death of King Charles I: "London was not to be a centre of taste" (27). Evidently, the author refers to taste in the *ancien régime* (baroque) sense of the term: "Court architecture was dead" (28). The author points out the decline of the Court as the artistic and cultural promoter. Summerson also states:"The character of the Georgian town house was fixed under Charles I" (29). However, the rising of a society driven by profit and the need to rebuild and to extend London after 1666 largely contributed for the development of the new architectural and spatial schemes. The new taste was dictated by convenience and efficiency. The London square and the London brick terrace house had their origins in the 1630's, but their character and function were established throughout a larger period. Also, as Elizabeth Mckellar argues, the evolution of the brick terrace house cannot be only analysed through a Palladian perspective (30). Mckellar supports the opinion that the development of the seventeenth and early eighteenth century London new house is revealing of a transitional period (**Illustrations 85,** p. 187 **and 86,** p. 188). Vernacular and new classical formulas were used giving expression to a sober and functional architectural unit: "The main characteristics of the house were its brick, symmetrical frontage and double-depth plan. The house displays a radical evolution of decorative elements down to a few key essentials" (31). Mckellar indicates four different types of the London house:

- The brick terrace houses, which maintained some of the traits of previous architectural models;
- The West End Barbon regular and uniform prototype, which used a revolutionary standardized scheme;
- Some of the City houses built after 1666, which attempted a more diversified scheme and decoration;
- The houses built on the periphery of London, which showed a combination of vernacular repertoire and new models.

The London terrace house gave shape to an architectural unit and was afterwards extensively developed and reproduced by speculative building. It was the utilitarian character of this design that assured its longevity.

The political vicissitudes marking the history of England in the mid-seventeenth century had an obvious impact on the social balance of forces. The rise of Parliamentarianism and the influence of continental European baroque society represented two contradictory but powerful forces. Charles II's pre-fire building legislation and urban projects resumed the trend begun in the late sixteenth century: the perception of the negative effects of an uncontrolled building process and the need to give to London a reformed urban image. However, the social and economic development of English society in the period gave a privileged role to private initiative. The relationship between the building agents was altered: the ideological representation of political power was replaced by the inexorable dynamic of financial profit.

Just before the Great Fire, London saw, thus, the beginning of an expansion outside the city perimeter, particularly, to the West End: the first steps towards the opening of Bloomsbury Square (1661) and St. James's Square (1662, 1665), Lincolns Inn Fields (1630s) and Leicester Square (1630, 1635) had been taken. The demand to preserve vast open spaces and the property system - large fractions of ground belonging to the same proprietor - opened the way to large-scale speculative enterprises. The aristocratic landlord took advantage of an expedient, which offered a reliable and steady profit perpetuating *ad eternum* its propriety rights: the building lease (32). This system favoured a chain of speculative building, which gave expression to a distinctive town planning expedient: the rectangular urban unit arranged around a considerable open space. In this context, the speculative builder and the long-standing master builder acquired a prominent place. Their roles often overlapped which was decisive for the development of the building system in relation to both technical and financial expedients. Social and financial demands initiated, thus, a process of residential exclusiveness, which would be greatly cherished by the enlightened minds of the eighteenth century (33). On the whole, the main lines of London's future urban development had been outlined.

Although the city of London had the appearance of a medieval city on the eve of the Great Fire (**Illustration 49**, p. 160), the previous town planning experiences and the powerful force of housing demand were on their way to transform the urban scenario. From this reality emerged the prompt and particular response to the catastrophe of 1666 and the unique urbanization process of the London West End.

## 4.2 The plans: design and accomplishment

### 4.2.1 Lisbon[4]

"The downtown, the district between the Terreiro do Paço and the Rossio, translates the exact town planning principles that Manuel da Maia proposed to the tormented city. It is in this area of approximately 560 meters (north-south direction) by 380 meters (east-west direction), in these 212 thousand square meters, to which we must add the area of the two main squares, where the destiny of the new Lisbon was laid out" (1).

Following Manuel da Maia's instructions, the three appointed architects and military engineers Eugénio dos Santos, Pedro Gualter da Fonseca and Elias Sebastião Poppe presented on April 19, 1756 to the Duque de Lafões (Duke of Lafões), governor of Justice, an evolving sequence of geometrical urban planning (2). These six plans were attached to the third part of the *Dissertação* and responded to the main town planning options expressed in its first two sections: from the maintenance of the previous urban maze (although correcting some of its most disproportionate and irregular aspects), to the building of a new and regular scheme. The three teams had to delineate two different plans: a first including all of the existing churches and a second following a less restricted design.

The six plans were thoroughly considered and commented on by José-Augusto França in his work *Lisboa Pombalina e o Iluminismo* (*Pombaline Lisbon and the Enlightenment*). The three first plans comply with Manuel da Maia's specific demands:

- **Plan 1**, drawn by Gualter da Fonseca and Francisco Pinheiro da Cunha, is an attempt to regularize the old city although maintaining its overall layout. The long connection between the two main squares was kept on its location (*Rua dos Ourives do Ouro*, *Rua dos Douradores* and *Rua dos Escudeiros*, which underwent enlargement works in the early eighteenth century) and so was the medieval *Rua Nova dos Ferros*, the city's first trade centre (**Illustration 50**);

- **Plan 2**, devised by the team Elias Sebastião Poppe and José D. Poppe and **Plan 3**, signed by Eugénio dos Santos and A. Carlos Andreas, present a more regular and free design. **Plan 2** attempts to rearrange the old layout. However, the key connections between the two main squares, which França refers to as a "L" shaped link, are still maintained according to their old alignment. This feature visibly restrains the plan on the west and south areas. As a result, the *Terreiro do Paço* is displayed according to an irregular design. **Plan 3**, although respecting the same premise is able to achieve an overall more

[4] Notes p. 196

**50. Plan 1**. Aid Pedro Gualter da Fonseca and trainee Francisco Pinheiro da Cunha.
Etching (china ink) with pink and grey watercolour wash.
Dims: 840x640 mm.
**MC (Lisbon)**.

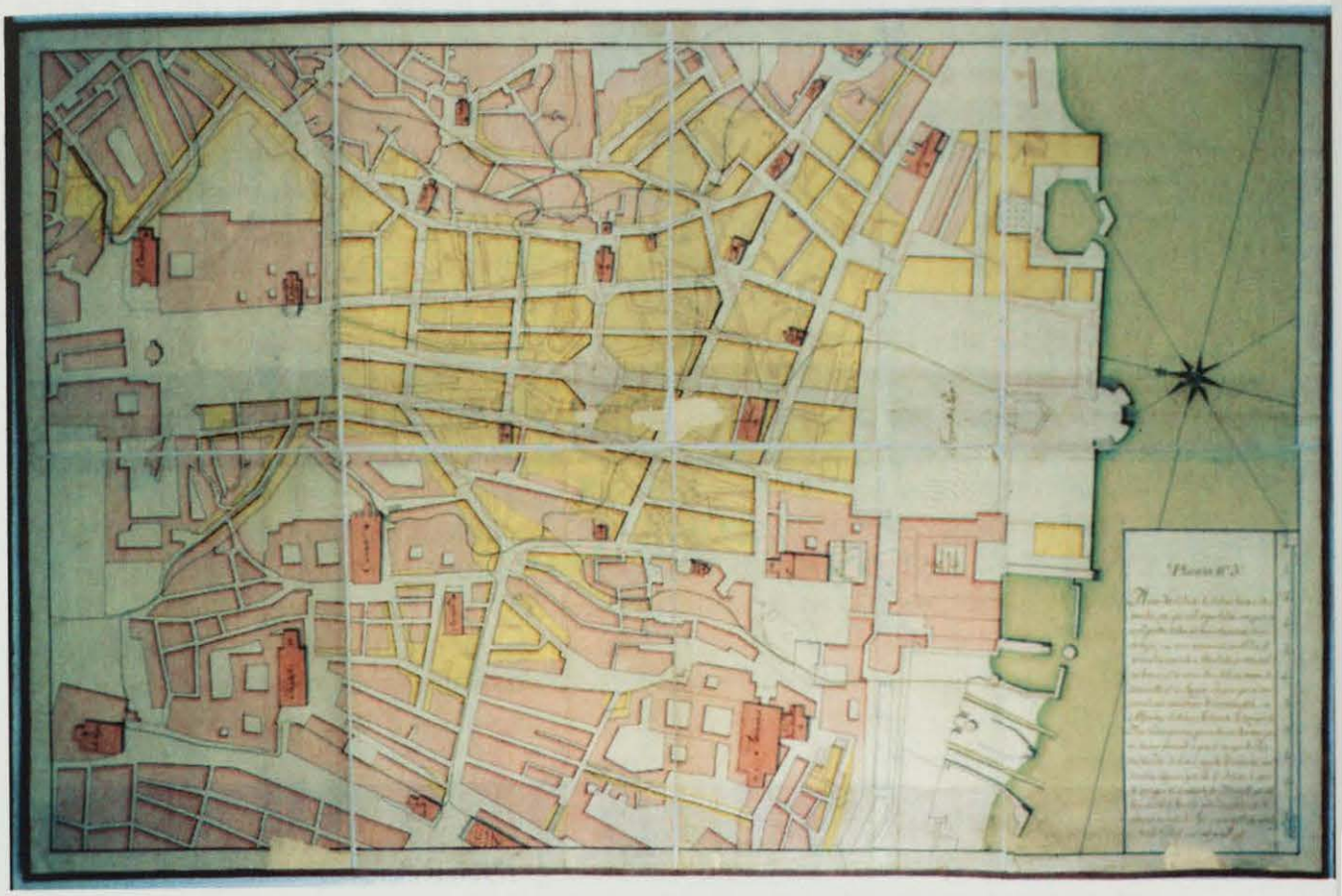
balanced scheme: the connections to the old part of the city to the west and to the east are better established despite the more rational character of the plan; the *Terreiro do Paço* appears for the first time as the dominant element for its regular layout and impressive dimension (**Illustrations 51 and 52**);

- **Plans 4**, **5** and **6** are presented as personal projects by the three assigned engineers. **Plan 4** (Pedro Gualter da Fonseca) and **plan 6** (Elias Sebastião Poppe) propose a rational approach based on a chequered maze of intersecting regular streets. Both exhibit a central square as in **plan 3**, although **plan 6** gives to it a different dynamic: in this latter solution, the square is opened to receive the imposing structure of one of the downtown churches. This plan presents a cellular pattern, which is more adaptable and therefore more able to interconnect with the adjacent areas of the city. As França asserts these areas are reordered through a radiant scheme and therefore functionally linked to the main downtown area. However, we believe that this type of pattern was not consonant with Lisbon's history of town planning and did not conform to the idea of city cherished by Manuel da Maia and Pombal. In fact, this design was not able to provide the city centre with the required spatial cohesion. Also, as França stresses, the *Terreiro do Paço* is designed as a closed space losing its important functional and symbolical connection to the river (**Illustrations 53 and 54**). **Plan 5**, signed by Eugénio dos Santos, the city council architect, was selected by Pombal to give shape to the new Lisbon. This plan was able to include a number of important prerequisites and to structure them according to both an innovative and pragmatic scheme. The main feature of the plan is the downtown area. However, the area to the west, which included the district of *S. Paulo*, adjacent to the river, and the *S. Francisco* Hill, is also part of the proposal (**Illustration 55**).

Eugénio dos Santos' s plan is a chequered design taking advantage of the topography of the site. It rearranges the area between the two main squares free from previous defining elements, e.g. the location and alignment of the main streets and the inclusion of all of the existing churches. Nevertheless, this town planning redefinition reinforces the function of the old area. The commercial heart of the city is reordered to better represent and serve its main purpose. The plan develops from the river to the north, presenting the *Terreiro do Paço* as the ordering element. To the north, the *Rossio* closes the urban maze by its symmetrical western alignment with the main square. Between these two open spaces, five main roads develop vertically, being flanked by three secondary streets, and eight other roads run perpendicular to the first ones. This area shows a chequered design which is able to imprint a spatial dynamic to the whole composition. The diverse direction and dimension of the northern and southern blocks break the monotony of the design and highlight the shape of the two main squares.

Unquestionably, the link between the destroyed city centre and the new plan

**51. Plan 2**. Captain Elias Sebastião Poppe and trainee José Domingos Poppe.
Etching (feather) with pink watercolour wash.
Dims: 860x640 mm.
**MC (Lisbon)**.



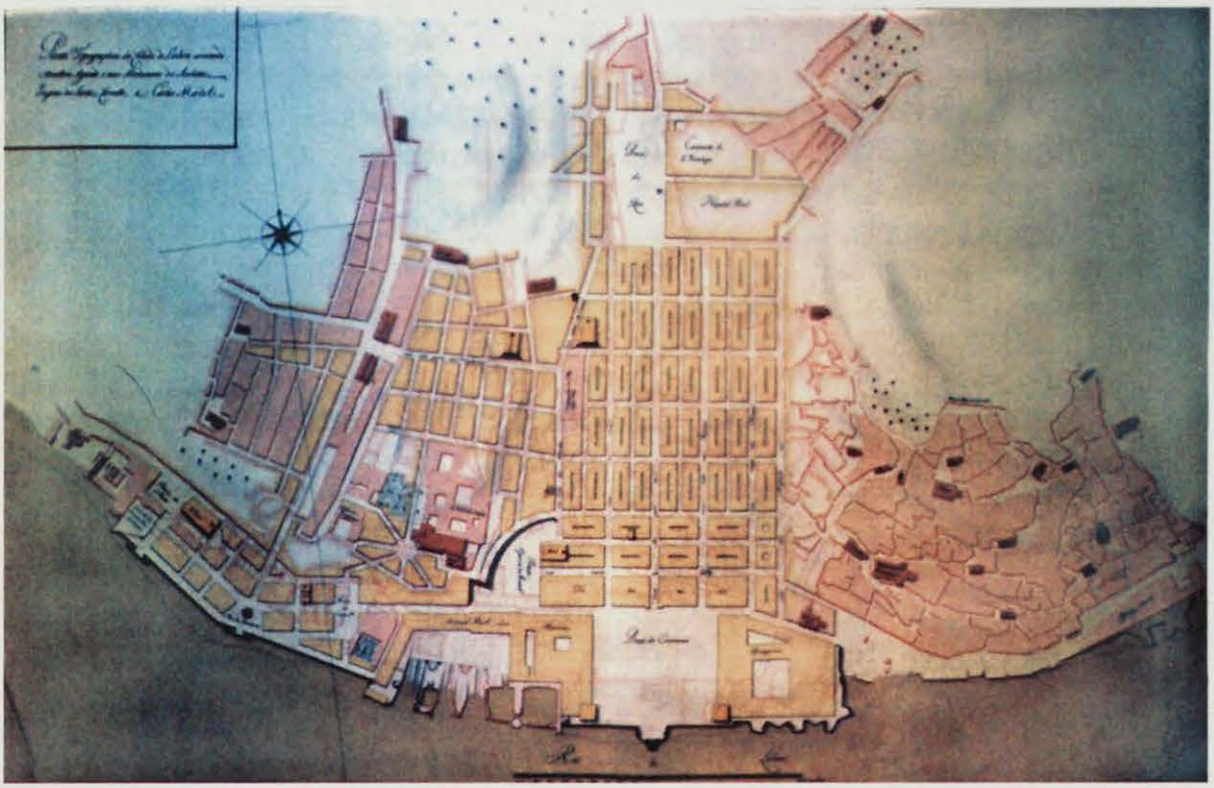
**52. Plan 3**. Captain Eugénio dos Santos e Carvalho and Aid António Carlos Andreas.
Etching (feather) with pink and yellow watercolour wash.
Dims: 617x1063 mm
**MC (Lisbon)**.

is provided by the inclusion of the two old main squares. This fact superbly explains the choice of the old site for the rebuilding of the new city: the structuring elements of the old layout were maintained in order to keep the fundamental attribution of the latter. In other words, the old city centre continued to be the commercial and financial heart of the kingdom and the empire. Therefore, still following Manuel da Maia's guidelines, the main square facing the river, where circa two hundred and fifty years before the royal palace was built, was now planned only for the public buildings. This strategy complied perfectly with Pombal's plans for Lisbon. The royal palace, which Manuel da Maia presents in his *Dissertação* as the main reference for the location of the new city, was relegated to a secondary plan. The district named by Manuel da Maia to receive the Court (between **S. João dos Bem Casados** and **Estrela** to the west of the area covered by the plan – see **Illustration 43b**, p. 144) never fulfilled this task. The king had established its provisional residence in the western districts of *Belém* (location of a royal residence) and *Ajuda* (where he built a wooden palace) for fear of another earthquake. Therefore, the project was abandoned, as it did not prove to be relevant for the development of the new city. The delay in the building of the royal palace is an obvious sign of the subordinate role it played in Pombaline Lisbon: "The building of the Palace, considered at first as a priority, did not reveal itself as the conceptual structuring line of the new city" (3). At the turn of the century, in *Ajuda* far from the location proposed by Manuel da Maia, the royal palace found finally its place. Thus, the new *Praça do Comércio* (Commerce Square) replaced the old *Terreiro do Paço* expressing symbolically and physically the alterations that the Portuguese society had undergone throughout the previous two and a half centuries.

In the wide valley of *Valverde*, to the north of *Rossio*, Pombal furthered the building of a public garden following the example of other European cities. As França stresses, it was not only the first public garden of Lisbon, but with the exception of the gardens of the royal palace of *Queluz* also the first to be designed by an architect in Portugal (4). Planned by the military engineer Reinaldo Manuel dos Santos (d. c. 1789), the *Passeio Público* ("Public Promenade") (1764/1777) was conceived to be a leisure and gathering place for a renewed and reformed society: the new elite that Pombal wanted so decisively to promote (**Illustration 43a**, p. 144). According to some foreign accounts, the garden was insignificant and gloomy (5). França refers to it as the image of the narrow-minded character of the emergent bourgeoisie (6). This character was inextricably linked to the Pombaline project, which furthered a new mental and social attitude within the confines of a very authoritarian political framework. However, the *Passeio Público* represents unquestionably an enlightened town planning statement: the promotion of a civic interchange taking place separately from the sacred and royal festivities. This was how enlightened urban planners understood these public places and the reason why the *Passeio Público* was included in the Pombaline plan for Lisbon. Vauxhall Gardens in London represented probably the most paradigmatic example of this new town planning demand. As most of the features of the enlightened city, the public gardens were extensively developed and used by the nineteenth century society. Lisbon was no

**53. Plan 4**. Aid Pedro Gualter da Fonseca.
Etching (feather) with watercolour wash.
Dims: 800x610 mm.
**MC (Lisbon)**.

**54. Plan 6**. Captain Elias Sebastião Poppe.
Dims: 610X910 mm.
**MC (Lisbon)**.



**55. Plan 5**. Captain Eugénio dos Santos e Carvalho. Plan amended by Eugénio dos Santos and Carlos Mardel (later version). Inscription: "Planta topográfica da Cidade de Lisboa arruinada também Segundo o novo Alinhamento dos Architectos Eugenio dos Santos e Carlos Mardel". ("Topographic Plan of the ruined City of Lisbon according also the new Alignment made by the Architects Eugénio dos Santos Carvalho and Carlos Mardel"). Drawing by João Pinto Ribeiro.Etching (china ink) with pink and yellow watercolour wash. The original plan by Eugénio dos Santos is lost.
Dims: 1189x764 mm.
Copy from the original kept in the **IGP (Lisbon)**.
Published in Silva, Vieira da, *Plantas Topográficas de Lisboa*. Lisboa: Câmara Municipal de Lisboa, 1950.

exception: the particular social character of the *Passeio Público*'s town planning program stressed its contemporary inadequacy and, conversely, its privileged role in Romantic Lisbon. This fact (mis)leads França to consider this garden as the transition between the rationalism of the Pombaline project and the Romantic city.

The whole process of the rebuilding was directed by the State: in January 1756, the *Junta do Comércio* (Commerce Division) was assigned to control and implement the rebuilding of the public buildings, namely the Stock Market and the Customs House in the new *Terreiro do Paço*, afterwards named *Praça do Comércio*. The following April, the *Casa do Risco* (Drawing House) was created, where a team of architects worked on the new plans for the city and its buildings. From November 1755, a clear and systematic legislation was passed, which defined the layout and proceedings of the private rebuilding (**Appendix 2**). Pombal promoted the private initiative not only by necessity but also by design. On one hand, it could finance most of the rebuilding; on the other hand, it would help the development of an enterprising class which could embody his political pressure group. The private landowners built the bulk of the new city. However, they followed a precise spatial and architectural program projected and directed by the State. In fact, the conceiving and enforcement of the latter represent the best expression of the Pombaline town planning project for Lisbon: a model made feasible by a coercive and well-structured global plan of actions. Without the combination of the technical expertise and the political structure, Pombaline Lisbon would have never been accomplished (**Appendix 2**).

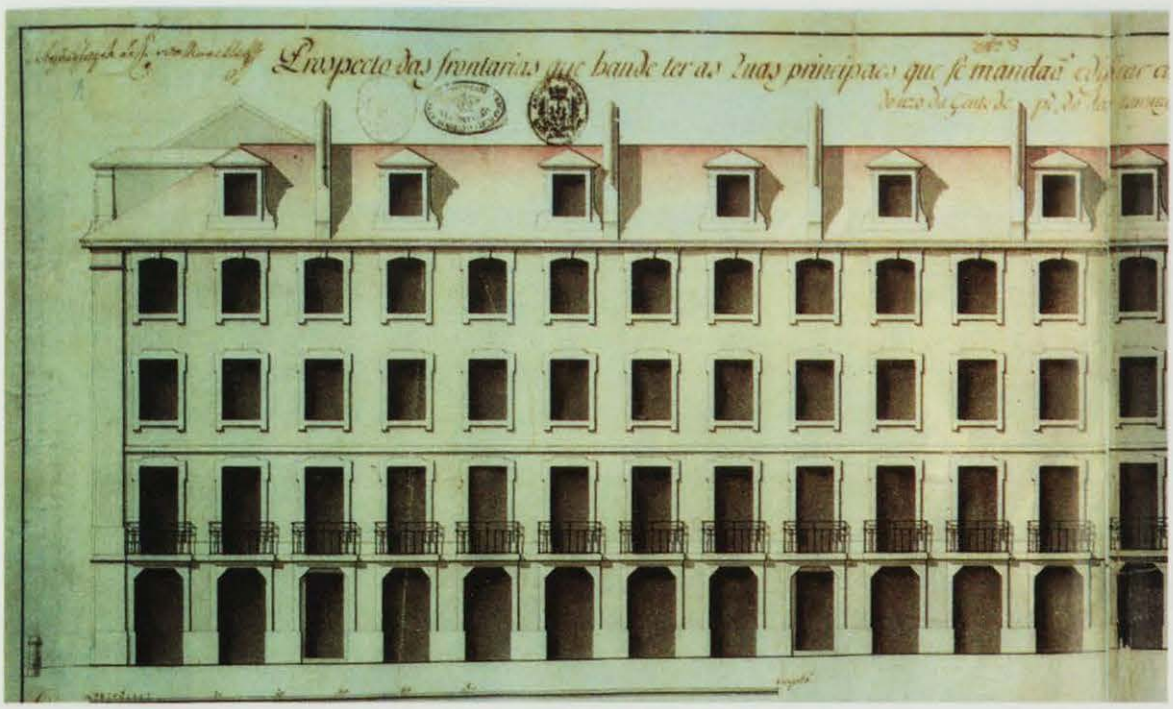
Carlos Mardel and Reinaldo Manuel dos Santos, who successively took charge of the rebuilding, did not alter significantly the initial project. Carlos Mardel replaced Eugénio dos Santos as director of the *Casa do Risco,* after the premature death of the latter (1760) and introduced some changes in the *Rossio* area. The eastern side was rearranged by the exclusion of the Royal Hospital and the opening of a number of streets which gave place in 1775 to another square (*Praça da Figueira*) to the east; also some of the measurements were slightly incorrect and had to be amended. Reinaldo Manuel was active after the death of Carlos Mardel and replaced Miguel Angelo de Blasco, the successor of the latter, as Director of the *Casa do Risco* in 1770. He intervened in the completion of *Rossio* and was responsible for the design of the *Passeio Público*.

The new buildings were intended to be a fundamental element of the plan. As França emphasizes, Pombaline Lisbon was mainly a town planning venture and its architecture was submitted to the demands of its spatial concept. As such, the implemented architectural designs followed essentially Eugénio dos Santos' proposals. A series of façade designs were created in the *Casa do Risco* to be applied in different areas of the city (there is an album of seventy façade designs which is kept in Lisbon's city council archive). These designs have been thoroughly analyzed by José-Augusto França. Not only did the

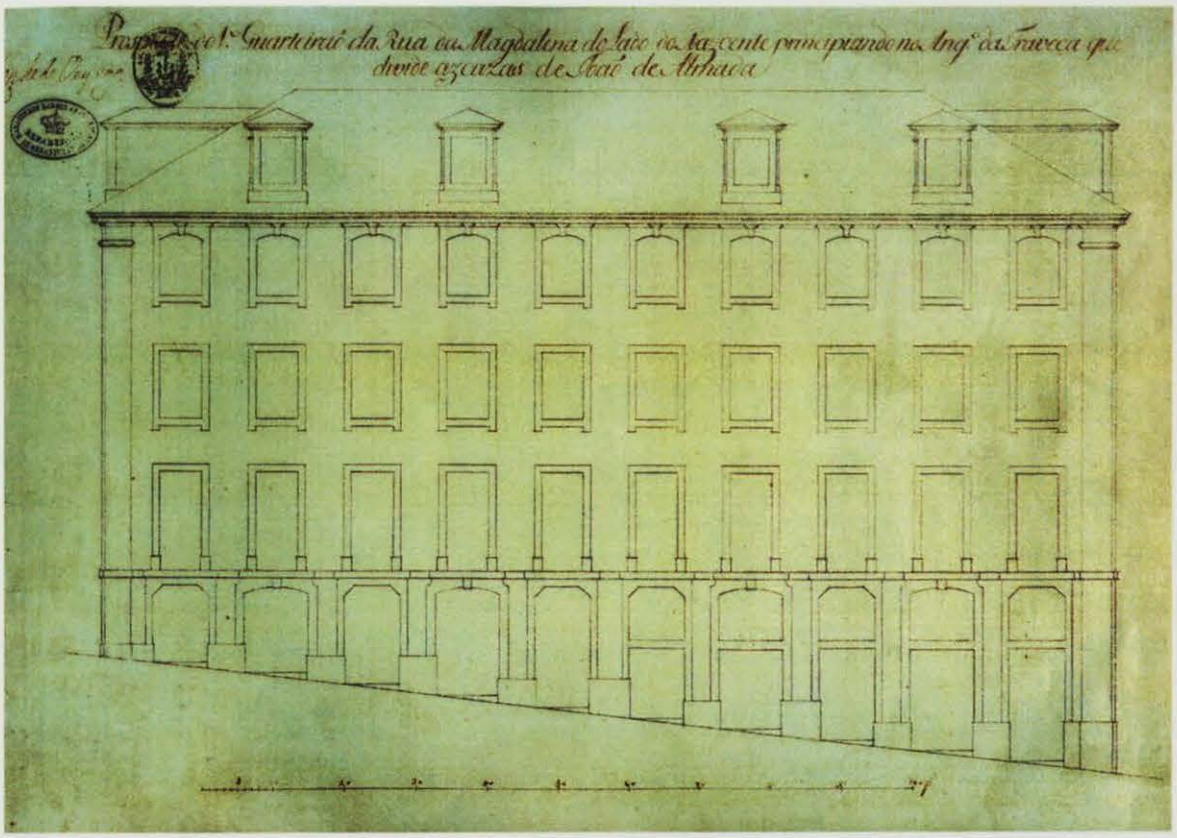
façades conform to a pre-defined architectural solution, but also the building projects were conceived as whole structures, agreeing with a number of requirements:

- First of all, it was crucial to establish the architectural identity of each street marking their importance in the street hierarchy. To this end, Eugénio dos Santos designed a façade to be used in the main streets. From this design another two were conceived for the other areas of the downtown. França named them as type A, B and C façades (**Illustrations 56, 57 and 58**). With the exception of the number of floors, these designs are similar to the new houses erected before the earthquake in the ***Rua dos Ourives da Prata*** and ***Rua dos Ourives do Ouro***: a sober and monotonous fenestration, only animated by the first floor balconies (**Illustration 26**, p. 93). According to França, these three types of façades were used as working material for the whole new city: from the up-market areas to the secondary streets "the scheme is identical, however the details vary becoming more sober" (7). In the *Dissertação*, Manuel da Maia expresses the idea that the buildings should not have more than two floors above the shops. However, the private landowners expressed their disapproval of such a restrictive financial solution. Therefore, Eugénio dos Santos's designs show a three-storey building with an extra attic floor with dormer windows. Façades A, B and C vary only on the decorative details of the fenestration. Some different façade elements were later introduced, namely and more significantly for the whole *Rossio* composition. This square was the last downtown area to attract the attention of Pombal and his military engineers. Carlos Mardel was the architect in charge. In *Rossio*, he tried a slightly different architectural dynamic, which broke the blunt monotony of Eugénio dos Santos's designs: the introduction of pilasters, separating different tenements in each block, gave to the former a visual autonomy, which was reinforced by the inclusion of a first floor balcony window over the main entrance (**Illustration 59**). As França notes, the articulation between a first floor window balcony and the main entrance was extensively used in seventeenth century Portugal, as a differentiating element of the noble building façades. As such, it had been reclaimed by Pombal to be used in the new city. *Rossio*, as the second most important square of the city qualified for the use of this type of façade;

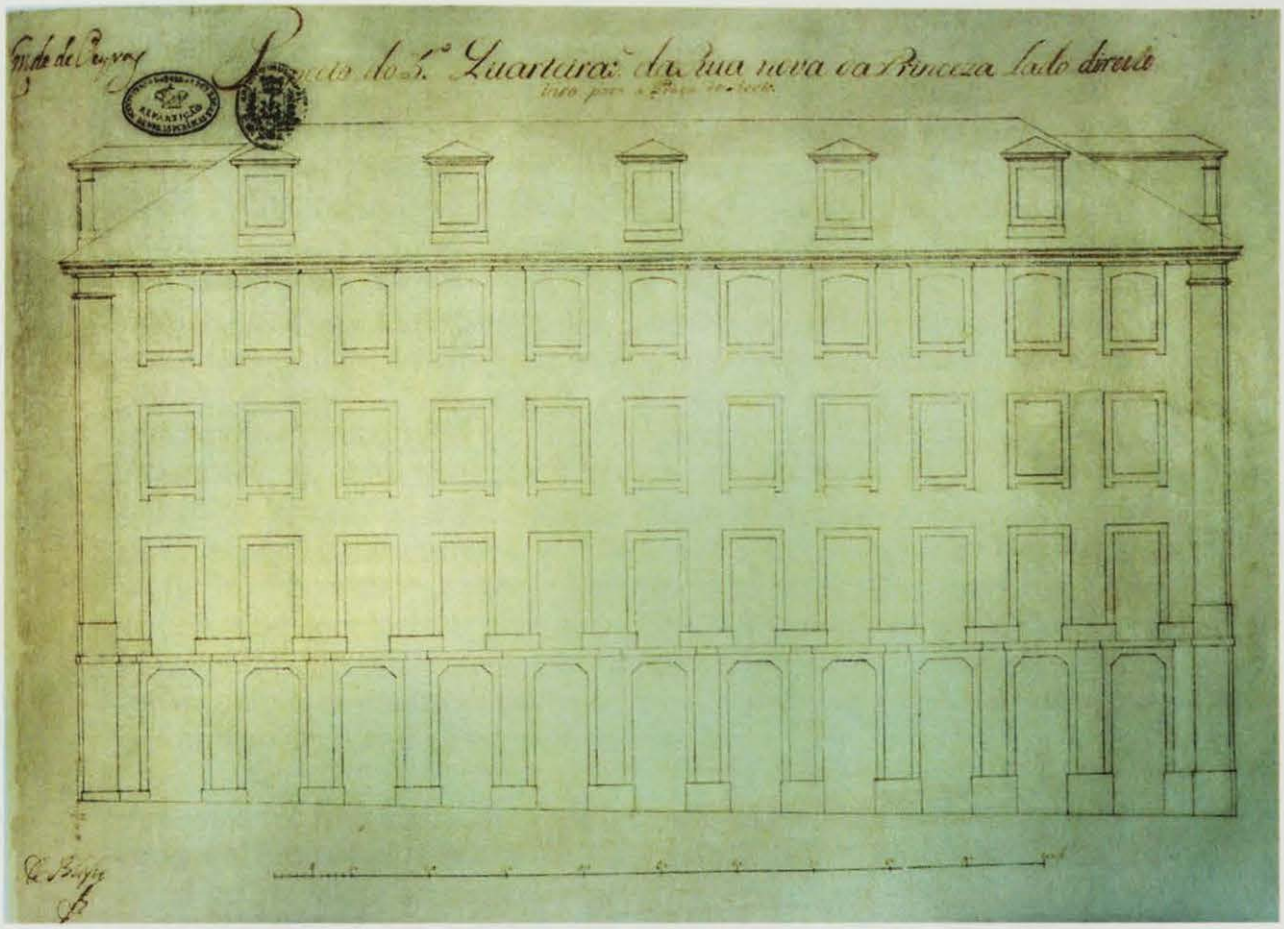
- The whole structure of the Pombaline building was also conceived as a means to respond to financial constraints and building efficiency. To this end, Pombal promoted the standardization of the building process. França refers to the pre-fabricated wood buildings, which came from Holland to shelter Lisbon's citizens just after the earthquake, as the probable inspiration (8). This system was also being used in London as it had immediate and obvious financial advantages. In Lisbon, as França stresses, the scarcity of human and financial resources was reason enough for the building standardization: "Organization and rationalization of the production were, therefore, the leitmotiv imposed




**56. Façade A** (according to França, José-Augusto, *Lisboa Pombalina e o Iluminismo*. 3rd edition. Lisboa: Bertrand Editora, 1983). Detail. Inscription: "Prospecto das frontarias que han-de ter as ruas principaes que se mandão edificar em Lixboa baixa arruinada e se dividem com culunelos para separação do uso da gente de pé do das carruagens" ("View of the façades of the main streets which are to be built in the ruined downtown of Lisbon, divided with little columns in order to separate the pedestrian area from the carriages"). Signed by Sebastião José de Carvalho e Melo and Eugénio dos Santos e Carvalho.
Etching (china ink) with watercolour wash.
Dims: 100,5x33,5 cm.
Published in *Cartulário Pombalino*, Departamento de Património Cultural, Arquivo Municipal de Lisboa (Lisboa, 1999). **AHCML**.



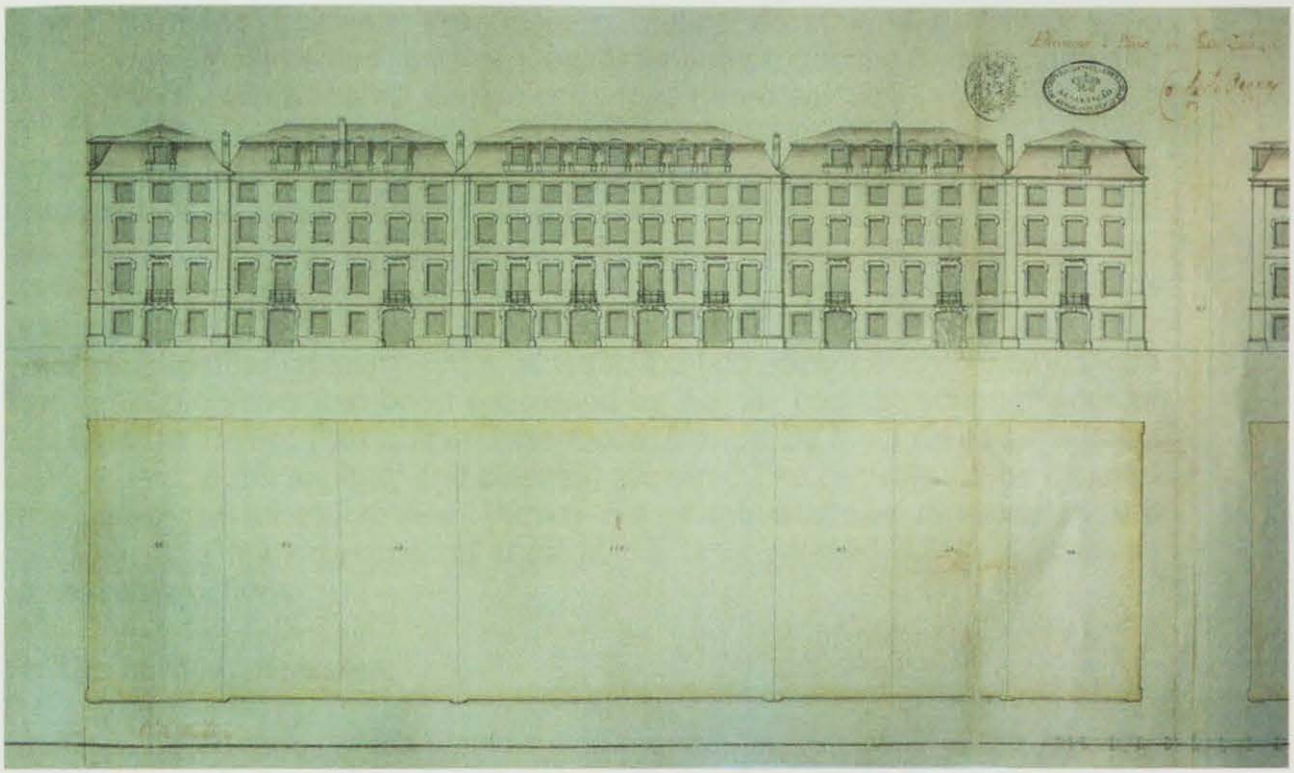
**57. Façade B** (according to França, José-Augusto, *op. cit.*). Inscription: "Prospecto do 1° quarteirão da Rua da Magdalena do lado do Nazcente principiando no angulo da traveça que divide as cazas de João de Almada" ("View of the 1st block of the eastern side of the *Rua da Madalena* [*Madalena* street], beginning at the junction with the alley which divides the houses of João de Almada"). Signed by the Earl of Oeiras.
Etching (china ink).
Dims: 52x35,5 cm.
Published in *Cartulário Pombalino* (1999). **AHCML**.



**58. Façade C** (according to França, José-Augusto, *Idem*). Inscription:
"Prospecto do 3º quarteirão da Rua Nova da Princeza. Lado direito indo para a Praça do Rocio" ("View of the 3rd block of the *Rua Nova da Princeza* [Princess New Street]. Right hand side going to the *Rossio* Square").
Etching (china ink).
Dims: 49x35,5 cm.
Published in *Cartulário Pombalino* (1999). **AHCML**.

by this conjuncture and this is a new phenomenon" (9). The principal requirement was to build swiftly and to sell quickly. However, a more extensive concept is subjacent to this solution: the building of a utilitarian architecture apt to face the challenge imposed by Pombal's aspirations for the new city. The pre-fabrication of the building elements, the design of the façades and the interior layout of the building, which gave structure to the so-called *Prédio de rendimento pombalino* ("Pombaline tenement") was more an ideological statement than a technical innovator enterprise. Raquel Henriques da Silva, who studied these procedures after 1777, states that we are in the presence: "of a perfectly stable background of building practices, which never aroused any kind of hesitation amongst master builders and the notary himself seems to operate, as if he was using a very familiar handbook" (10). These building practices regarded a streamline production of exterior and interior elements: masonry work for trenches, chimneys, corners, balconies, window frames, staircases, handrails, etc; wood work for windows, doors, floors, etc.; iron fittings as nails, screws, balcony protections, etc. and the tile production to be used in the interior of the buildings (11). As previously mentioned, the study of the enlargement road works from the Restoration period indicate already the maturing of some of these technical and legal procedures. Therefore, architectural and building procedures were inextricably linked to a traditional practice to which was given a more structured political and legal framework. Obviously, the vastness of the building work in Pombaline Lisbon and its firm institutional and technical supervision reinforced and improved this easiness of procedures. However, Pombal's main achievement was, once more, the relationship he was able to establish between these technical schemes and a pre-defined political and ideological framework.

- Anti-seismic measures were also an important aspect of the rebuilding process. First of all, Manuel da Maia in the *Dissertação* emphasizes the need to develop some town planning requisites: the height of the buildings should not surpass the width of the streets and should not exceed two floors. However, this proposal could bring added problems to the already complex issue of the property rights. The financial liability of such a project was reason enough to secure another solution. Thus, the military engineers directed their efforts to the conceiving of a building structure able to reduce the risks of a seismic impact. As a result, they designed a wooden anti-seismic structure (known as the ga*i*ola – cage) around which the stone buildings were erected. This structural element was built as a means to render more flexible the heavy masonry building structure, which prevailed in seventeenth and eighteenth century Lisbon. França gives a clear description of the *gaiola*: an articulated and elastic interior structure, detached from the rest of the building (12). It represented an unquestionable technical progress and was used in Lisbon's buildings up until the twentieth century. Recent studies have focused on the origins of this structural device (13). According to the latter, the *gaiola* system seems to be a development of a traditional European structural expedient also used in



**59. Elevation of the buildings for the new *Rossio* square, Lisbon.**
Detail. Inscription: "Ellevacão [sic] e plano de hum lado da Praca [sic] do Rocio" ("Elevation and plan of one side of the *Rossio* square". Signed by the Earl of Oeiras).
Etching (china ink) with watercolour wash.
Dims: 12x35,5 cm.
Published in *Cartulário Pombalino* (1999). **AHCML**.

Portugal (**Illustrations 60a, 60b and 61**). Nevertheless, as an anti-seismic device, the *gaiola* structure was probably the first of its kind in Europe.

- Fire prevention was another concern expressed by Manuel da Maia in his *Dissertação*. Fires were the major cause of destruction in urban areas at the time. With regard to the catastrophe of 1755, the fire had proved to be more destructive than the earthquake itself. It was necessary to add to the whole new building structure some anti-fire elements. Following the advice of Manuel da Maia, a system of walls was implemented between each tenement running higher than the roofs – the so-called *parede corta-fogo* (fire-break wall).

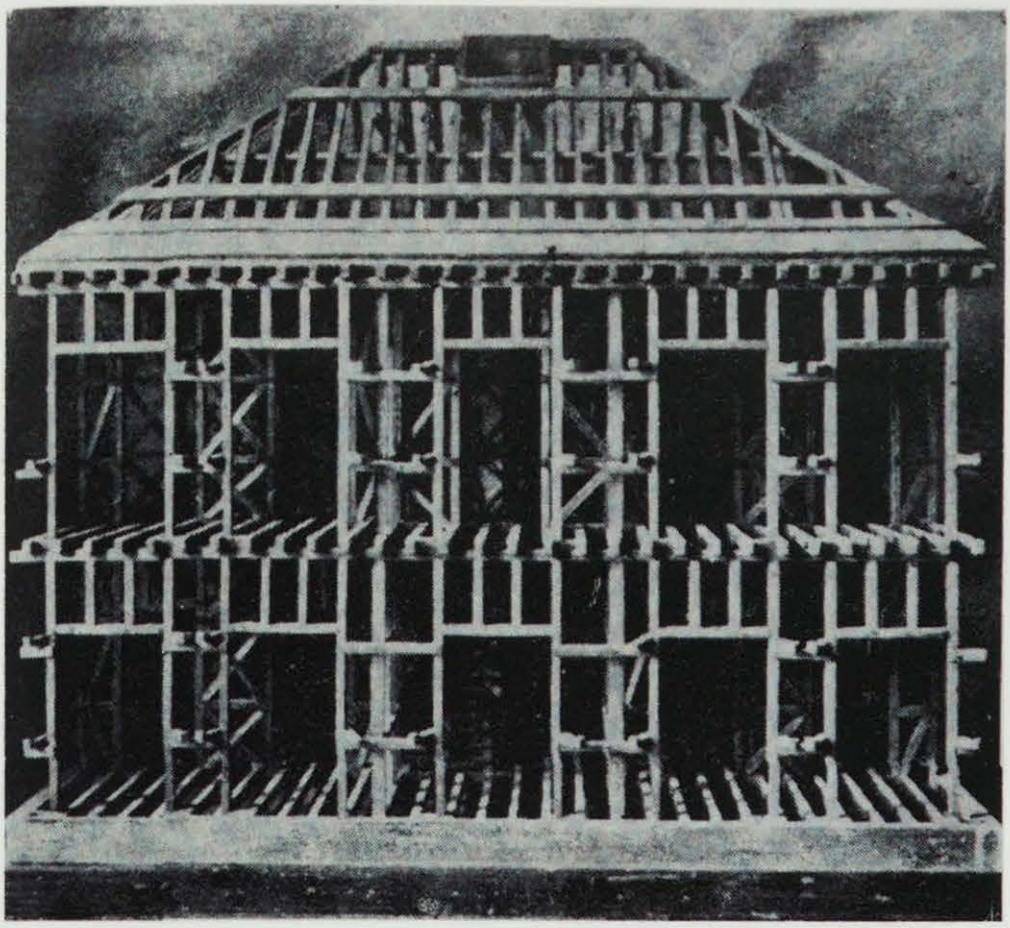
The project for the new city also included the development of some urgent infrastructures. The aqueduct built in the early eighteenth century represented the major public work of the period. However, Lisbon required a sewerage system, which would obviously improve the many sanitary problems exacerbated by a deficient cleaning system. The lighting of the capital city was also another concern. From, at least, the late seventeenth century, these two main problems had been addressed by the city council, although without success. In the 3rd Part of the *Dissertação*, Manuel da Maia reveals his ideas with regard to the sanitary and cleaning systems. The *carretães*, who cleaned the streets of all the rubbish thrown out of the windows regularly by the citizens, was the only method used at the time. Manuel da Maia presents three other options:

**1.** The building of sewers;

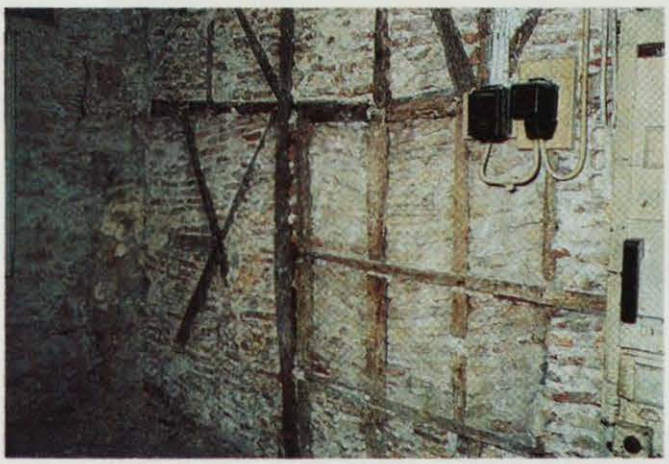
**2.** The use of carts, which would travel around the city early in the morning picking up only the solid waste and leaving the fluid waste to be cleared out naturally;

**3.** The system of the *alfugere*: a street opened between every two streets and two rows of buildings, flanked by façades with no doors and only windows, where the rubbish should be thrown.

From all of these choices, Manuel da Maia selected the first: "It needs yet ... to be chosen, with anticipation, the best manner to free the streets from all the obstructions which make them filthy, selecting the most appropriate of them all (...) I declare that the first (method) (which has been used in some countries) consists of the building of sewers running in the middle of the streets with capacity to receive all of the waters and all of the superfluities of the buildings and from these should run underground pipes in order to relieve the buildings to sewers" (14). He is aware of the financial burden that the first solution would represent. Following Manuel da Maia's indications, which conformed to the Prime Minister's idea of an efficient modern city, the sewerage system was legally enforced and was to be financially supported by the landowners (15) (**Illustration 62**). Nevertheless, its deficient implementation did not answer to Lisbon's sanitary problems: only a small



**60a. Model of a *Gaiola*.** Published in França, José-Augusto, *Ibidem*.
Wooden model.
Dims: 600x892x102.5.
**IST (Lisbon).**



**60 b. Detail of the *gaiola* structure: *Rua Augusta* (*Augusta* Street), Lisbon downtown.**
Published in Coelho, Teresa Campos, *A Utilização de Madeira na Construção Pombalina – Alguns Exemplos Históricos*. Lisboa: *Gecorpa*, 2000, pp. 101-130.

6

**61.** ***Cruz de Sto André*** **(*Sto André*'s Cross) structure: *Rua das Fontainhas*** **(*Fontainhas* Street), *Mouraria*** **District in Lisbon.** Published in Coelho, Teresa Campos, *op. cit.*

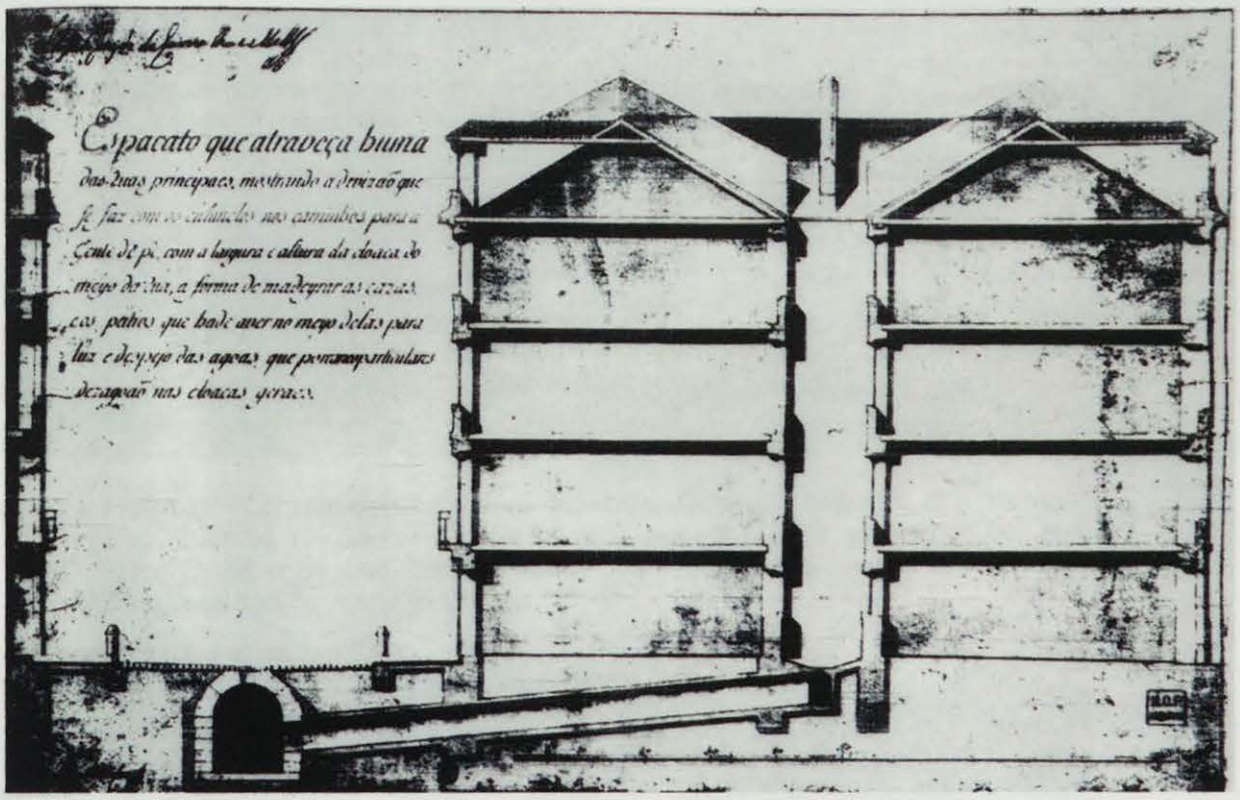
fraction of the new city received this new system, which presented important technical debilities (16). The old military engineer also considers the improvement of the water supply system. However, Lisbon's lighting system was a problem that remained unsolved: it only received an adequate solution in 1780, after the Pombaline period. Some of the main streets were furnished with sideways pavements protected from the traffic by small posts, undercover passages were demolished, specifically in the new Commerce Square, and the downtown was raised with the earthquake debris and supported by a wooden structure which includes a system of wooden piles lying submerged in the Tagus waters (17). All these solutions were developed at the *Casa do Risco* following and improving Manuel da Maia's ideas.

The building of the *Praça do Comércio* deserves a particular mention for its major significance in the whole town planning ensemble. As the main square of the city, it represented physically the core of the political and economic Pombaline program. The *Praça do Comércio* was therefore designed to serve symbolically and functionally that ultimate requirement. Its monumental spatial and architectural composition reflects better than other area of the Pombaline city the character of the town planning program. As França asserts: "The Commerce Square embodies the most original effort of the Lisbon enterprise. It is, simultaneously and paradoxically, its luxury and its symbol: it represents, in an abstract mental context, the material power and the spirit of economy of the new city ..." (18).

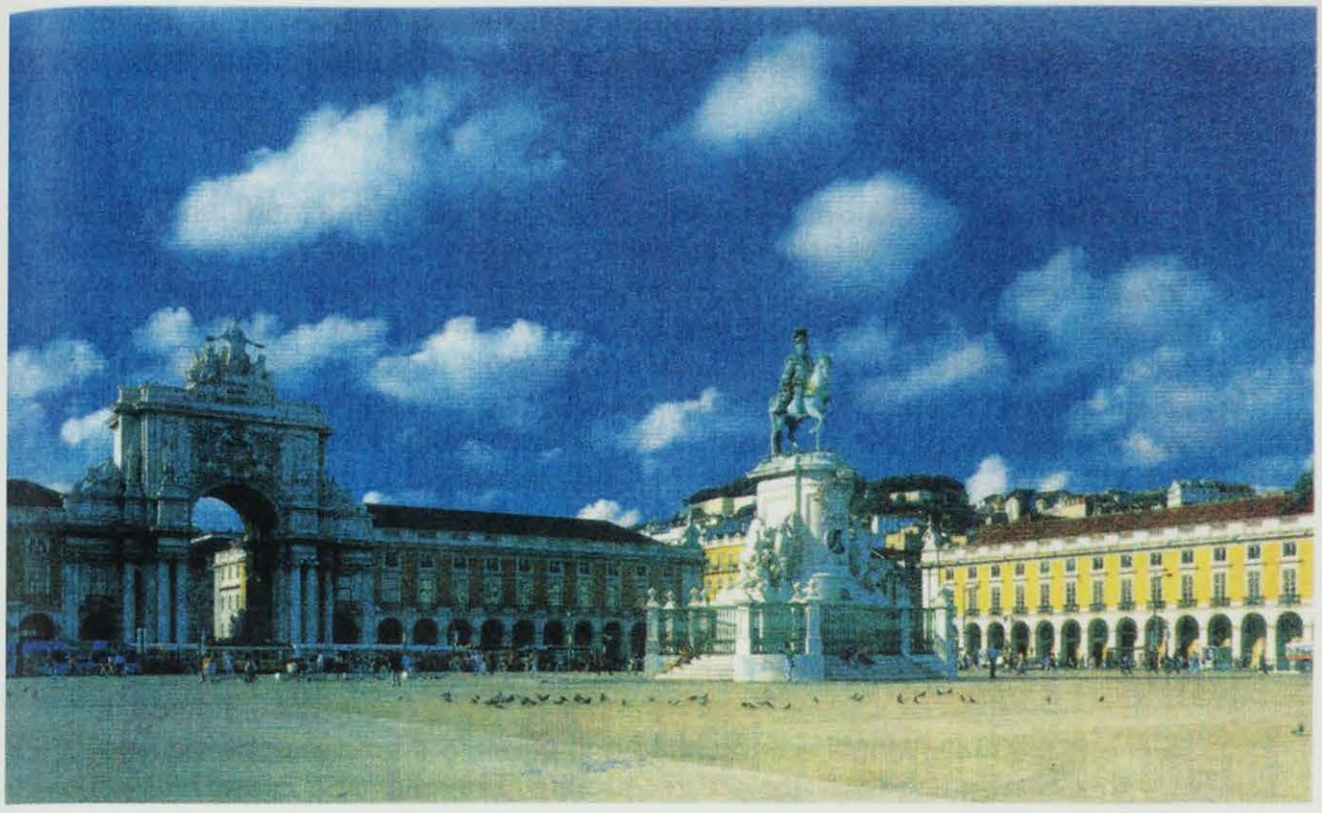
Eugénio dos Santos' s project for the new *Praça do Comércio* reflects first of all a superb articulation between architecture and location: the layout and design of the buildings highlights the ancient connection between the city and the river (**Illustrations 63 and 64**). The need for a uniform architectural layout was felt since the late sixteenth century (19). This project persisted in the minds of the urban experts up until the early eighteenth century: the earthquake provided the undeniable opportunity. The architecture of the *Praça do Comércio* complies with few and simple precepts. It develops a regular and sober re-expression of some defining features of the old square through a low structure able to match the height of the new city. These defining features were:

- The overall layout of the old royal palace and particularly its imposing *Torreão de Terzi* (*Terzi* Tower), which was used as a model for the towers built at the end of each lateral row (20);
- The many arcades scattered through the old city, namely, the royal palace portico: "...concerning this matter I think that it would be useful and embellishing to build arcades on the *Terreiro do Paço*, although on the commercial streets I think that this will not be convenient ..." (21).

The porticos were present in pre-earthquake Lisbon on the main squares and central streets and usually sheltered shops. Some established the connection between the areas inside and outside the city walls. Although they had an




62. **Project of the sewers**. Signed: Eugénio dos Santos e Carvalho. On the top left hand side there is the signature of Sebastião Joseph de Carvalho e Melo (Marquis of Pombal).
Etching (feather) with watercolour wash.
Dims: 550x380 mm.
**AHMOP (Lisbon)**.



**63. The *Praça do Comércio* (Commerce Square).** Architect: **Eugénio dos Santos e Carvalho.** Eugénio dos Santos's triumphal arch was not built. In the second half of the 19th century, the arch was finally erected according to the plan of the architects Veríssimo José da Costa and A. Camels (1873).

**64. The *Praça do Comércio* according to a project never carried out.**
Attributed to Carlos Mardel.
Coloured engraving. **Dims**: 410x825 mm. **MC (Lisbon)**.

important urban distinctiveness, they also represented a liability with regard to the urban criminality and traffic. As such, they were often mentioned in city council minutes.

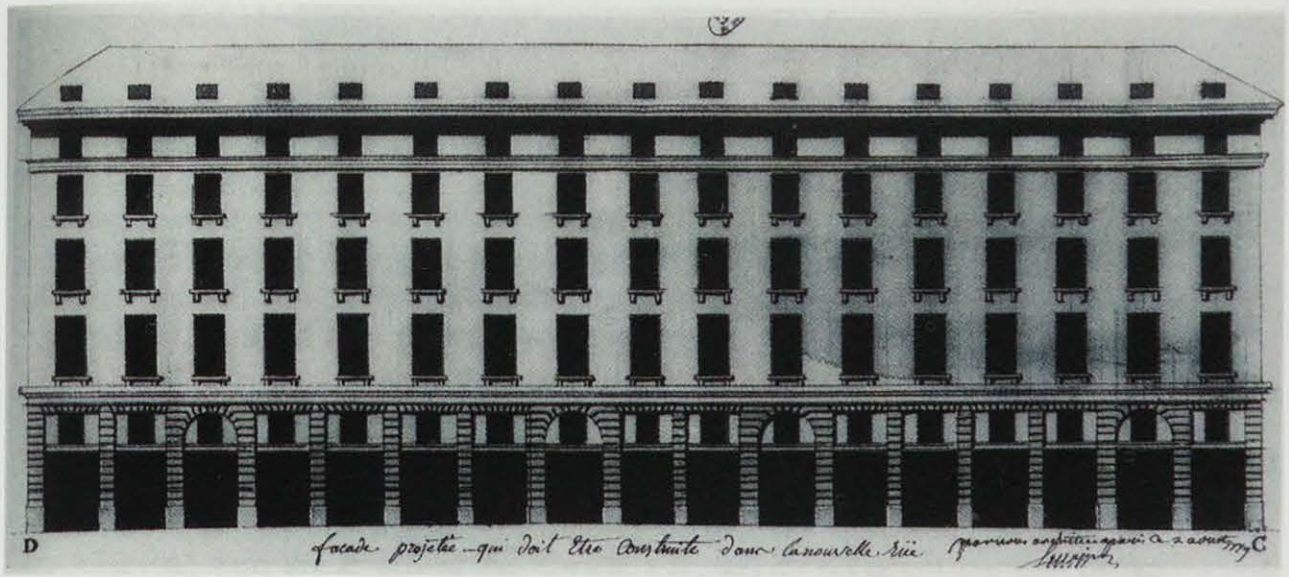
As already mentioned, Manuel da Maia's first proposal of a three-storey building was not followed for legal and financial reasons. However, the height of the new buildings did not excessively surpass this anti-seismic requirement: it only included an extra floor. The structure of the main square was designed to correspond to this overall program. Thus, Eugénio dos Santos's proposal shows a two-storey building with an extra mezzanine floor inside the arcades and a mezzanine floor under the roof (22). In doing so, it reinforced not only the spatial dynamic of the ensemble but also of the square itself: the two towers and the arch opened in the block opposite to the river give the monumental tone to the composition. The project was approved in 1759 by Pombal and was followed with slight alterations:

- The exclusion of the towers' dome and of the roof, which were replaced by balustrades;
- The rearrangement of the series of arcades of the block facing the river (the two compositions to each side of the triumph arch gained an extra arcade, whereas the two small lateral blocks lost one arcade each). An equestrian statue of king D.José I was placed in the middle of the square (1775).

The architectural taste of the *Praça do Comércio* seeks a balance between the utilitarian design of the overall downtown project and the representative character of the main square. To understand this equation it is necessary to define the latter element. Although it was at some point named the *Real Praça do Comércio* (Royal Commerce Square), after the erection of the equestrian statue of the king, the new square has a distinct bourgeois character. If its layout follows unquestionably the *Place Royale* fashion, its architectural taste and its urban purpose clearly indicate a different town planning concept. John Harris develops an interesting comparative analysis between Eugénio dos Santos's proposals and Inigo Jones's Covent Garden and Whitehall Banqueting House's pavilions (23). The similarity between the designs is striking: in Covent Garden we are confronted with the same two storey composition with two extra mezzanine floors, one inside the porticos and the other under the roof; the three storey square form of the pavilions with an alternate use of triangular and round pediments on each row of five windows follows unquestionably the same model of the *Praça do Comércio*'s towers (**Illustration 48**, p. 160). The rusticated treatment of the porticos and the roof in Covent Garden are the only two dissonant elements. However, the roof was present in the first of Eugénio dos Santos's designs and the masonry treatment of the arcades in Covent Garden is somehow expressed in the *Praça do Comércio* towers as a memory of the old Terzi Tower. As already mentioned and as John Harris asserts, the resemblance between both architectural designs could reflect the importance of Pombal's London experience: "In London Pombal would certainly have been aware of how

Palladianism as an architectural style had become a national idiom, and would have appreciated the utilitarian character of London's plain Palladian urban architecture" (24). Contradicting the prevailing idea that the *Praça do Comércio* derives directly from the French *Place Royale* structure, John Harris asserts: "I suggest it is here in London, not Paris, that we should seek the genesis of the *Praça do Comércio*" (25). Following this line of thinking, John Harris does not hesitate to hint the Neo-Palladian theoretical treatise *Vitruvius Britannicus* as "the genesis for the rebuilding of Lisbon" (26).

The link between the Pombaline architectural proposals and Palladianism can be found in a shared theoretical and operative framework. In fact, Palladio and Serlio represented the fundamental sources of the classical taste in seventeenth century Europe. The latter extensively divulged the designs of the former and decisively influenced Portuguese military engineering's sober and utilitarian architectural proposals. According to Timothy Mowl and Brian Earnshaw, it was also the main influence for English architecture in the seventeenth century (27). The empirical character of the Portuguese military engineering architecture has been often mentioned. Its plain proposals which neither strictly conformed to Mannerism nor Classicism were developed according to a pragmatic use of the classical architectural formulas. They represent a particular exercise of the latter according to demands of financial restraint and utilitarian efficiency. As already mentioned, the Pombaline period used this legacy according to a defined conceptual project: the forming of a capital city of commerce (28). As Pombaline architecture, Palladianism represented a particular use of the classical taste complying with the economic and cultural demands of a commercial society. Taking into account the similarity of purposes, it is easy to establish the connection between both projects and experiences (29). In fact, the architectural design of Covent Garden and the *Praça do Comércio* was a prototype often used by neo-classicism: it responded to the demand of a functional articulation between urban space and representative architecture (30). It was also used in private urbanisation schemes, which combined both representative and speculative requirements (**Illustration 65**). Thus, we can assert that Pombaline Lisbon, in a masterly way, combined the pragmatism of the military engineering with an enlightened perspective of the use of architectural models: "For the embellishment of a public square we should not over-ornament the buildings – no more than two floors and, if we use the rustic order for their elevation we will heighten its beauty. We can build a balustrade on the entablature to raise the façade level and hide the ridge beam, which never produces an agreeable effect" (31). Overall, it represented a major accomplishment of the new idea of the city: a regular and standardised articulation of architectural modules in order to serve a particular political, economic and social project. Hence, the proto-neoclassicism of Pombaline Lisbon referred to by França (32), also apparent in many of the rebuilt churches. However, some of Lisbon's new churches show a mixture of baroque and rococo influences. Both the architectural taste of the new downtown churches and the reduction in their number establish a compromise between the old and the new: to the sacred is still given a particular attention, although within the conceptual framework of the new city.

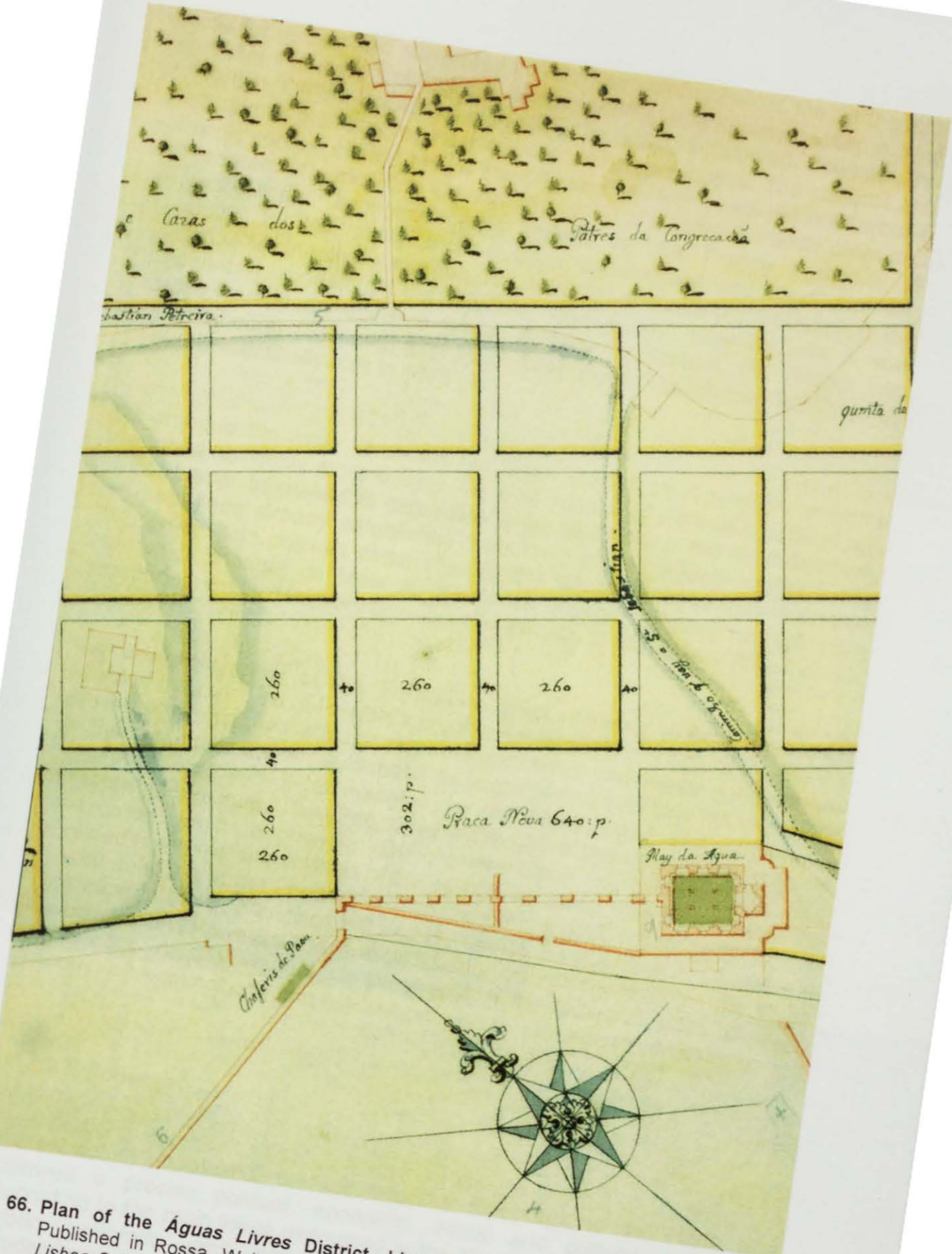



**65. Elevation of the buildings of the new streets opened on the location of the *Hôtel de Choiseul* in Paris. Architect: Lenoir le Romain** (1779). The plan carried out was slightly different and was drawn by the architect Louis-Denis Le Camus. Published in Harouel, Jean-Louis, *L'Embellissement des Villes (L'Urbanisme Français au XVIIIe Siècle)*. Paris : Picard Editeur, 1993.

Eugénio dos Santos's project was the first of a series of plans aiming to regularize other parts of the city. Manuel da Maia and Pombal cherished the idea to gradually furnish Lisbon with a rational urban grid. Thus, additional to this plan another was designed aiming to urbanize the far western area of the city as well as the Northeast area (**Illustrations 44a and 44b**, p. 147). The same military engineers designated by Manuel da Maia to work on the downtown plan designed this new project: Eugénio dos Santos, Carlos Mardel and E. S. Poppe, assisted by A.C. Andreas and J.D. Poppe. Again, this team followed the town planning precepts established by Manuel da Maia: the spaciousness of the new streets and their architectural layout should be kept. Unquestionably, the first merit of this project is the ingenious balance established between the existent and the new grid. The plan shows a dynamic rearrangement of the old urban structure, which consists on a grid plan interrupted in some areas by the introduction of radial lines developing from circular plazas. Although it was later improved and extended, it was never carried out. França also refers to an anonymous plan aiming for a reordering of the Castle Hill and its adjacent eastern areas (**Illustration 45**, p. 147). This project is incipient and is clearly distanced from the town planning premises developed in the other two. It might indicate a certain concern with this old part of the city. However, its appearance suggests that the area to the east was not of primary interest to Pombal and his team of engineers. Thus, it can be asserted that the maze of the Castle Hill and its adjacent eastern areas remained as the medieval urban feature. As such, they emphasise the programmed western development of the city. However, the Pombaline project, taking advantage of the topography of the location, is able to establish a harmonious relationship between the two different urban designs.

Although the additional plan was not carried out, the western area experienced a swift and important urban rearrangement and development. It occurred locally and was implemented by different agents. To the Northwest of the downtown (the *Cotovia* district), a private company, founded by two master builders, was responsible for a significant building enterprise (33). According to Pombal's determination, to the North of this latter area, in the district of *Águas Livres*, the Crown developed another important town planning project, which was the most significant in Lisbon after the rebuilding of the downtown. It was a factory unit, combining industrial and residential tenements, built to promote and develop the silk production, already established in the neighbourhood in the early eighteenth century. Despite its incipient industrial character, it was the first of the kind in Lisbon and paradigmatically expresses Pombal's views on the articulation between town planning and economic demands (34) (**Illustration 66**).

The rebuilding of the downtown was slow and was not accomplished in the Pombaline period. According to contemporary accounts, in the 1770s this area was still an active building site (35). The main downtown street *Rua Augusta* was the only one to be completed in the period. However, based on Portuguese documents, França asserts that the rebuilding process was fairly dynamic in the years following the earthquake: in five years the building of




**66. Plan of the *Águas Livres* District, Lisbon (1759). Architect: Carlos Mardel.** Published in Rossa, Walter, *Além da Baixa – Indícios de Planeamento Urbano na Lisboa Setecentista*. Lisboa: IPPAR, 1998. At the centre of the image, we can see the *Praça Nova* (New Square) surrounded to the North and the West by a grid of blocks; to the East by the *Mãe d'Água* deposit (Carlos Mardel, 1735) and to the South by a section of the Lisbon Aqueduct. **MNAA (Lisbon).**

houses for renting had surpassed the number existing before the earthquake (36). After Pombal's political fall, the rebuilding was resumed after a brief interruption. On the whole, the Pombaline project was followed. However, the completion of the latter was a slow and complex process. The political and economic context of Portugal in the following seventy years did not favour a swift program of works. The ideological fragility of a hesitant middle class and the political and economic chaos caused by the French invasions all contributed for the absence of a clear architectural and town planning program. After the civil wars (between 1820/34) and with the institution of the parliamentary monarchy, the situation was slowly reversed and it was possible to find an effective urban strategy for Lisbon: the *Rossio* was accomplished in 1845 and, after much controversy, the arch of the *Praça do Comércio* was finally built in 1875 (37).

The areas to the west, which did not follow such a strict program of works developed obviously more quickly. Up until the end of Pombal's political rule (1777), Lisbon increased its expansion to the West and to the North following the main lines already established from the early eighteenth century. The city's green field precinct established by the seventeenth century defensive line, which Manuel da Maia so cautiously wanted to keep as the city's boundaries, was extensively urbanized by the end of the century (38).

The accomplishment of the Pombaline town planning project for Lisbon reflected the outcome of Pombal's program of reforms for the country and the empire. It represented a major and unprecedented task made only possible for the same reasons which dictated its uncompleted success: the use of the State's political and legal machine as the fundamental and all-powerful enterprising structure. Therefore, if the authoritative character of the program was crucial for its conceiving and implementation, its fulfilment was also confined to the material abilities of the political structure. This fact explains the overall debilities of the Pombaline town planning project, which resulted in its restriction to the S. Francisco Hill and the downtown area and in the delay in its completion. However, these impediments did not overshadow the major importance of the venture. It presented a fundamental town planning accomplishment not only in a national but also in a European context.

### 4.2.2 Edinburgh[5]

As previously discussed, the extension of Edinburgh to the North also followed a precise political, economic, social and cultural project (1). According to the main ideas expressed in the *Proposals* of 1752, precepts of urban uniformity and embellishment structured the extension and modernization of the city. The process began with the construction of the

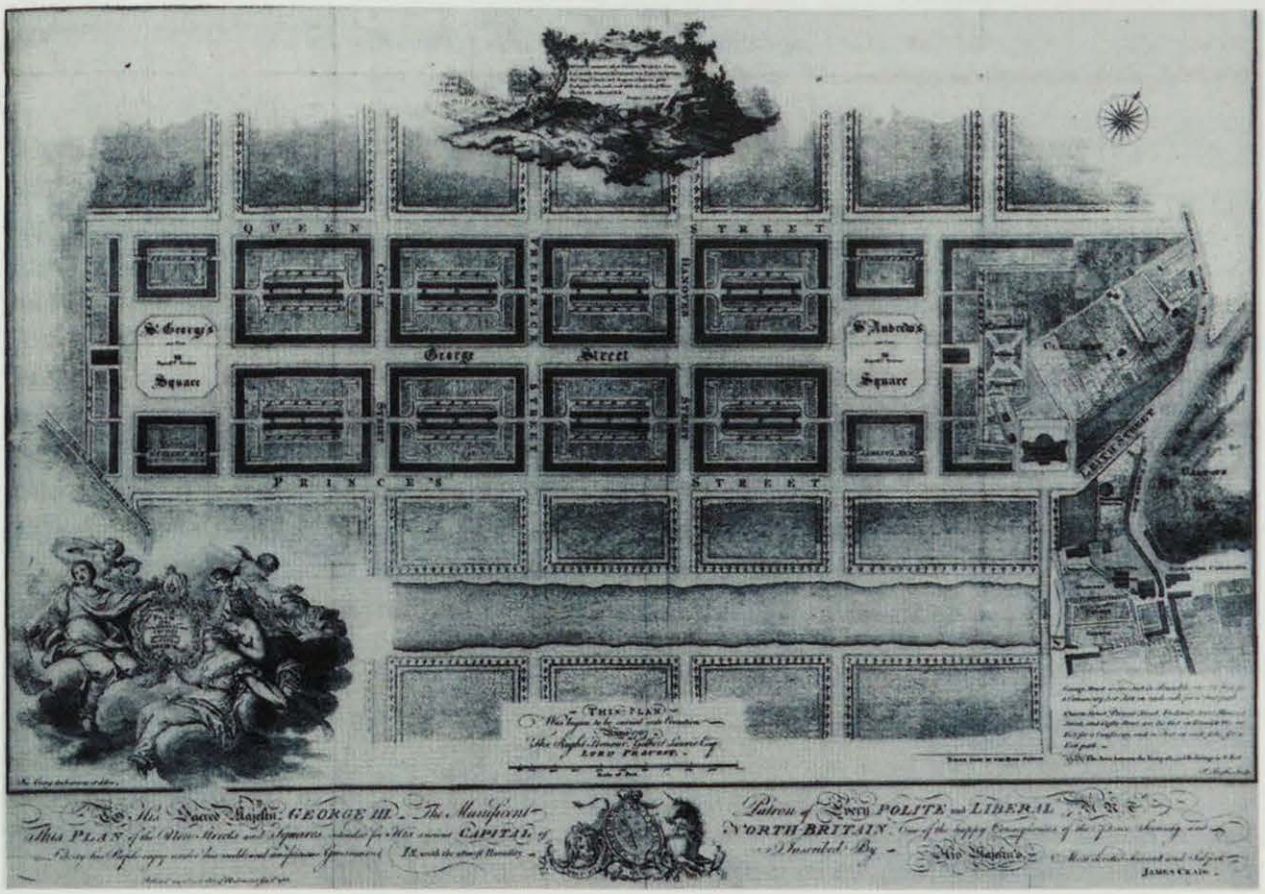
[5] Notes p. 199.

North Bridge (1763/1772) linking the medieval town to the northern area to be urbanised. The feuing of these grounds and the selection of a plan completed the first part of the town planning enterprise. In general, all of the measures advanced by the *Proposals* were actually carried out in Edinburgh up until the end of the eighteenth century.

On May 21, 1766, the City Council admitted six plans for the building of the New Town. On August 2, 1766 a document signed by George Clerk and John Adam (brother of Robert and James Adam, b. 1721 – d. 1792) considered "that the Plan mark'd nº 4 ... is the Best of those we have" (2). The 26 August, following the advice of John Adam and Clerk, the North Bridge Committee revealed the winning plan: plan nº4, signed by the architect James Craig (b.1721 – d.1792). However, complying with the lack of enthusiasm shown by Clerk and John Adam, they clearly state that "they do not find the said Plan has so much Merit as to be adopted as the Plan to be carried out into execution" but "it may be of use in giving others hints to improve upon" (3). The original plan is lost and according to the municipality's records suffered several amendments. These two factors have originated an important controversy: it is difficult to ascertain, with the documents available today, whether both the competition entry and the adopted plan followed the same urban design. This question also raises doubts with regard to the real authorship of the final plan (4) (**Illustration 67**).

Up until the final version was adopted in July 1767, the Bridge Committee Minutes and the City Council Minutes mention several times the fact that the selected plan was being improved. Although Craig is appointed in the former document as the architect responsible for the project, it is not clear who made all of the alterations: "... the Committee after many meetings and consulting with Lord Kaims [Lord Kames, Scottish philosopher, b. 1696 –d. 1782], Lord Alemour, Commissioner Clerk and Mr Adams and other persons of skill in these matters had reviewed all the former Plans with the greatest care and attention and considered several amendments proposed by Mr. Craig, and that Mr. Craig by their direction had made out a new plan, which Plan signed by the Lord provost of this date was produced" (5).

A Committee of Adjudication directed the process which led to the final version of the plan. The documents regarding this issue mention various intervening agents. The Committee is described as being composed of "people of distinction and taste", which included "the Messrs Adams, by whom several alterations and improvements were made to this plan" (6). According to the North Bridge Committee Minute of October 22, William Mylne (b. 1734 – d. 1790) was appointed to conceive "the Plan of the New Town and Improvements on the north of the city". Stuart Harris suggests that not only Mylne but also John Adam and George Clerk worked on this plan (7). Nevertheless, less than two months later, on December 10, another North Bridge Committee Minute refers to James Craig's new "two plans in different views". Also, a feuing plan attributed to James Craig, which most probably

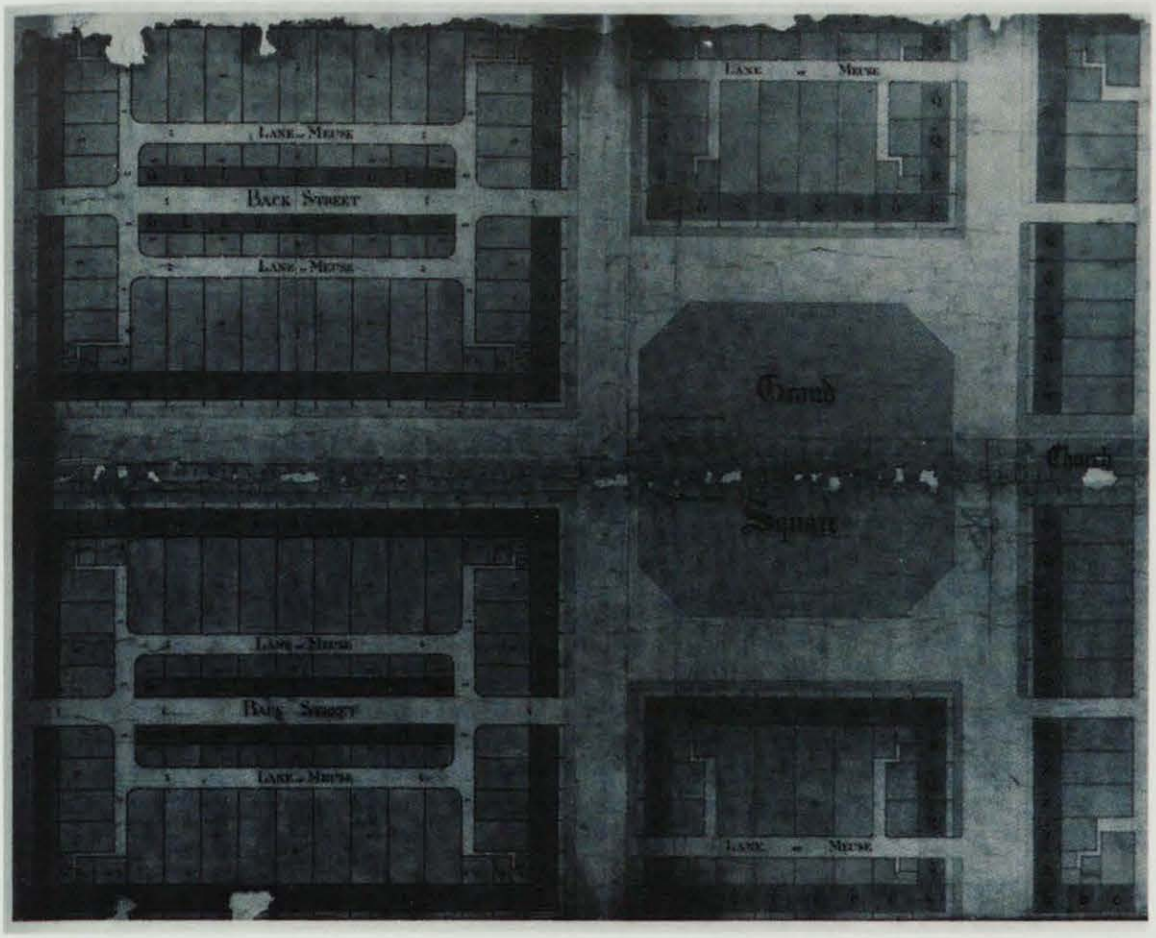



**67. The adopted plan for the New Town of Edinburgh.** Drawn by **James Craig** and engraved by P. Begbie (1768). Published in Fraser, Andrew, "A Reassessment of Craig's New Town Plans, 1766-1774" *James Craig 1744-1795*. Eds. Kitty Cruft and Andrew Fraser. Edinburgh: Mercat Press, 1995, pp.25-47.
**RCAHMS (Edinburgh)**.

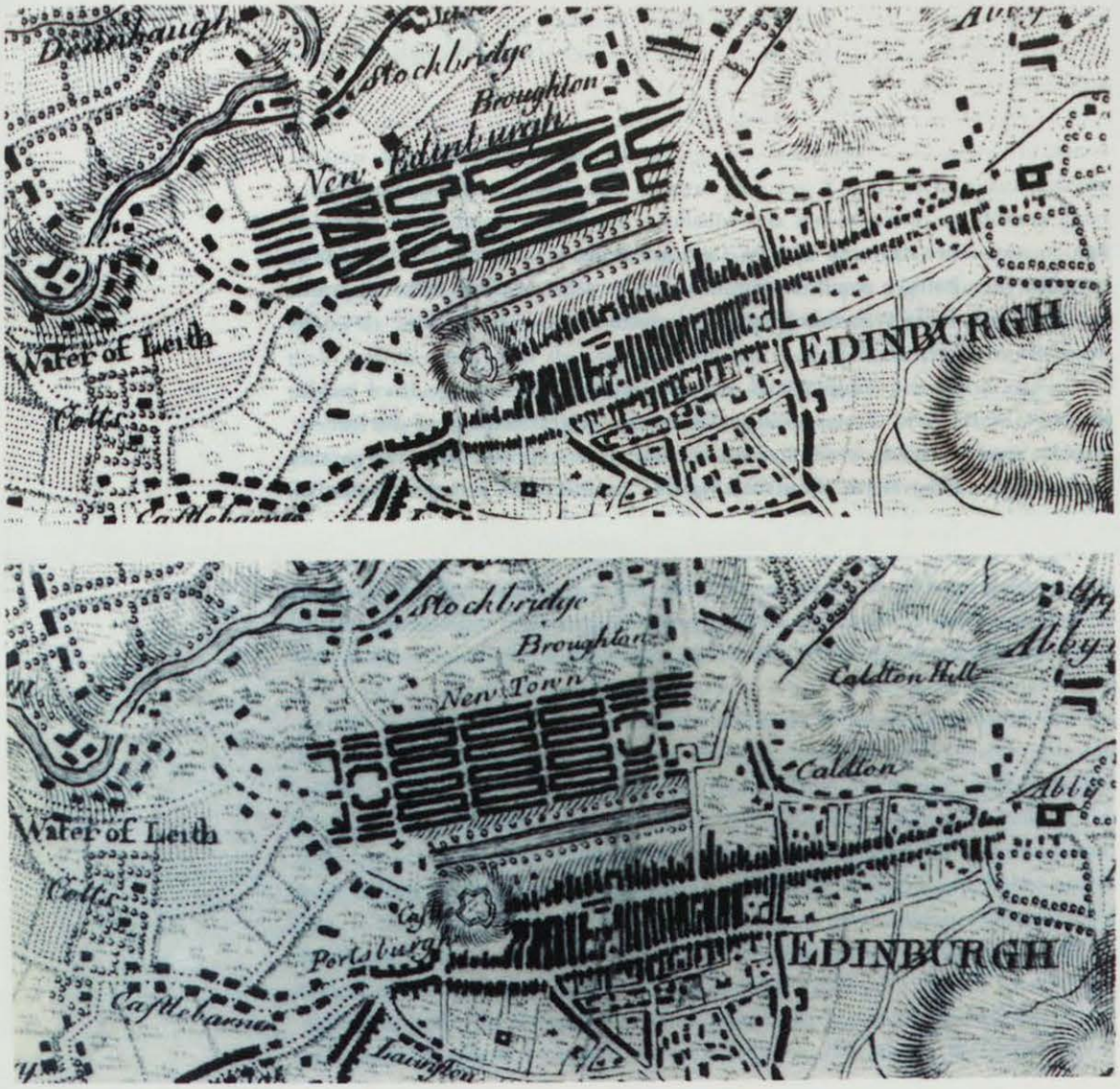
accompanied his final version of the New Town plan, shows the consistency of the latter (8) (**Illustration 68**). Apart from these documents, there is another important piece of evidence: John Laurie's "Plan of Edinburgh and Places Adjacent". This plan includes three different versions of the New Town's plan and was finalised just before the announcement of the competition results (**Illustration 69**). Stuart Harris argues that the first version represents Craig's winning plan and the second version is Mylne's plan and "clearly ... a more masterly reworking of the first "(9).

Contrary to Stuart Harris's views, the three versions of the New Town plan represented by Laurie are puzzling as they picture two completely different approaches to town planning. The first has been identified as a Union Jack design searching to conform to the political context of the period: "an egregious idea intended to ingratiate himself (James Craig) with the Unionists" (10). However, it could be argued that it is mainly a variation of the Vitruvian town planning model, which clearly influenced garden and landscape planning from the seventeenth century. John Gwynn (English architect, b.1713 – d. 1786) proposes a similar scheme for London's Hyde Park (11) (**Illustration 70**). However, it does not seem that Gwynn's design is the direct source of influence for Craig's plan. The model was the same, but the application was somehow different: Craig's plan envisages a perspective central view of the ensemble that Gwynn's scheme is not able to achieve.

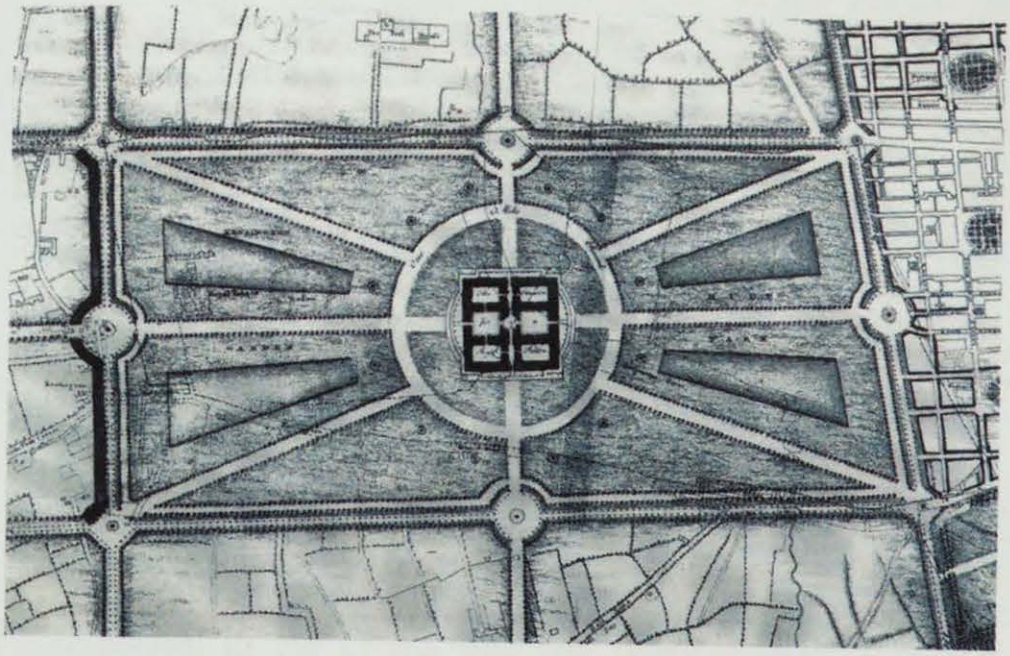
It is interesting to note that John Lowrey considers the issue of landscape planning with regard to Craig's final plan: "it is possible to be rather more specific and to suggest that the New Town plan was not only related to the landscape in a general sense but was specifically influenced by ideas about landscape design" (12). Lowrey makes the distinction between the two existing approaches to formal garden: the radial scheme and the axial self-contained design. The former was extensively developed in France and the latter in the Netherlands. This last version was followed in Scotland, namely in Kinross and according to Lowrey could have influenced Craig's grid-plan for the New Town. Nevertheless, the first version shown in Laurie's plan follows the town planning radial scheme. As such is in accordance with Laugier's ideas: "One must look at the town as a forest. The streets of the one are the roads of the other; both must be cut through in the same way ...Above all, let us avoid excessive regularity and excessive symmetry...", as Lowrey mentions (13). Laugier's text clearly expresses a town planning perspective, which already suggests a pre-romantic vision of the urban landscape. This perspective is not on the whole new: it is based on the baroque proposals, which had been so clearly expressed in Rome. Thus, we consider that Craig's first version reveals a clear knowledge of the Renaissance treatises and seeks a baroque town planning dynamic, which is not consonant with the pragmatism of the New Town adopted plan. If this first design is Craig's winning plan, it seems difficult to accept that he would follow a personal pre-defined town planning concept for his final and totally different version of the project. To reinforce this perspective, there is Craig's central square, which is present in all of his plans excluding, revealingly, the adopted version




**68. Feuing plan for the New Town**. Attributed to James Craig (1767?).
Published in Fraser, Andrew, *op. cit.*
**RCAHMS; NMRS, City of Edinburgh Collection, DC 7740.**




**69. Plan of Edinburgh and Places Adjacent by John Laurie**. Published in Mckean, Charles, "James Craig and Edinburgh's New Town" *James Craig 1744-1795* (1995), pp. 48-56.



**70. Plan of Hyde Park with the City and Liberties of Westminster.**
Detail. Gwynn, John, *London and Westminster Improved.*
London: 1766, plate 1.

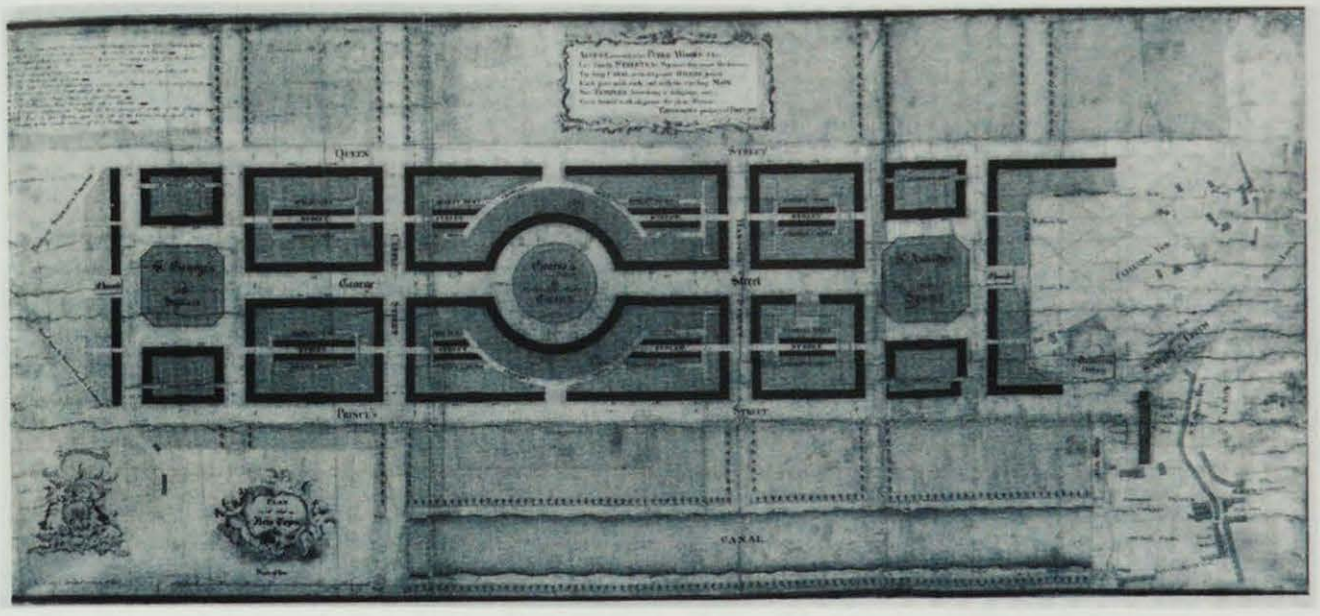
(**Illustrations 71 and 72**). In fact, Craig's several attempts to insert a central circus in the New Town plan could reveal his personal town planning conceptual program. His circus proposal unquestionably intends to break the monotony of the grid: in this, his views are consonant with Laugier's proposals. The other two plans represented in Laurie's plan are similar. They show a different town planning concept: a grid scheme structured by block components and closed by a square at each end (the last version was added after the final plan was adopted).

Adding to this debate, there is the controversy concerning the dating of Craig's Circus Plan, which is kept at the Huntly House Museum (14) (**Illustration 71**). First dated as a posterior design to the adopted plan, it seems now that it could have been conceived before July 1767. Therefore, it could represent Craig's "two plans in different views" mentioned by the Bridge Committee Minutes in December 1766 (15). This plan is not represented in Laurie's plan. This fact reinforces Stuart Harris suggestion that the second sketch represented in Laurie's plan was probably drawn by Mylne.

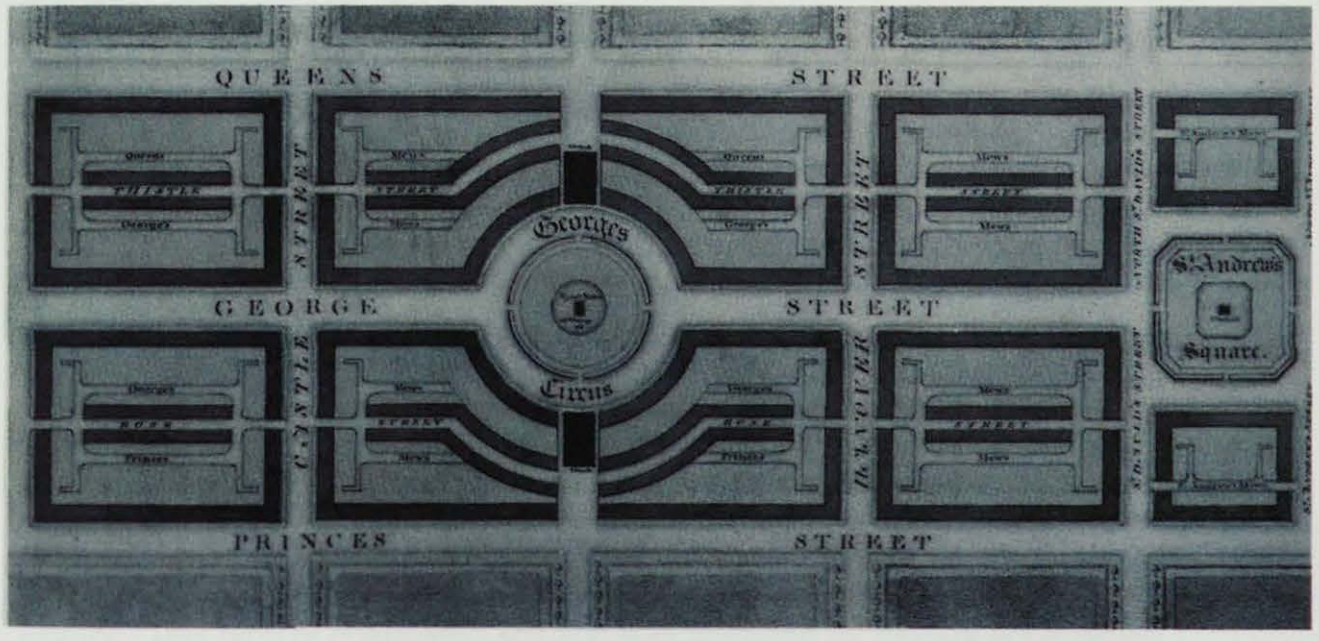
Considering all of this evidence, it seems obvious that the authorship of the adopted plan is not a straightforward issue.

Firstly we should analyse the plan itself. As referred to above, it can be described as a chequered design, developing between two squares, one at each end. A central street connects the latter and this ensemble structures the whole composition. Closing the scheme on both sides, two other main streets run parallel to the central one and between them there are two other secondary streets. Five streets run perpendicular to this scheme (two of them represent the inner side of the squares). The resulting grid defines the repetition of a block structure, which seems to be the chief element of the plan. The design is simple and succeeds in developing an harmonious connection with the Old Town: Princes Street, the first main street approaching from the south, was planned as a one-side road allowing a wide view of the medieval area and the Castle. To the North, another one-side road opens the city to the adjoining landscape. The plan is plainly pragmatic responding to a specific understanding of the enlightened city. A sense of financial restraint also shapes the proposal. On the whole, it promotes a regular and spacious city able to simultaneously receive the commercial society of Edinburgh and project the latter to the level of the contemporary progressive European cities.

Both the design and the concept of the project for the New Town show several similarities with the Pombaline Lisbon. Nevertheless, not a single author refers to Lisbon's example as a possible source of influence. Conversely, Wren's plan for London (1666), Nancy (*Place Stanislas* 1752/1756), Bath (1728/1775) and even Richelieu (1631) are often presented as possible models. All of these examples are paradigmatic of the town




**71. Circus plan for the New Town** (1766?). James Craig.
Published in Fraser, Andrew, *Idem.*
**CEMG - HH 418/1905 (Edinburgh).**




**72. Circus plan for the New Town (1774). James Craig.**
Engraving. Published in Fraser, Andrew, *Ibidem.*
**CEMG - 1978/526 (Edinburgh).**

planning movement of the early modern period. However, they represent different approaches to the subject shaped by the specific historical context that produced them.

Richelieu is the example closest to the renaissance models. It can be considered as a town planning prototype in early modern Europe. Nancy is an eighteenth century residential city built in the image of Versailles (1660/1685) and Dresden (1709/1732). The representative character of Nancy's project is conceptually far from the pragmatism of the New Town plan (16). Wren's plan superbly combines the theoretical renaissance contribution with a precise practical demand: the regular reordering of the medieval maze of the city of London. Bath can be described as a both a cumulative and innovative project. Using the baroque town planning experience, it develops new spatial elements giving form to one of the most important exercises of eighteenth century town planning. However, its vivacious urban dynamic is not consonant with the sobriety of the New Town plan (17). Obviously, different town planning models seem to have shaped both projects.

Conversely, the New Town plan and the Pombaline plan show an interesting likeness: both reinvent the old chequered design according to enlightened town planning precepts. In other words, a sober and simple geometrical design gives structure to a coherent urban unit. The latter serves well the purpose of creating a regular, spacious and amenable urban environment, easy to build and easy to sell. Within this conceptual framework, we can find another element of connection: a spatial hierarchy marked by the use of different architectural components.

The search for similar examples in Scotland has led the various authors to consider different town planning projects such as Stonehaven (1624), Fort William and Gilcomston in Aberdeen (mid-eighteenth century) and the North-East villages (second-half of the eighteenth century) (**Illustration 6**, p. 30). All of them show a grid pattern, mainly as a result of the need to give structure to a complete urban unit or/and regular feuing plots. The grid represents the most common town planning expedient in these cases: it conforms to utilitarian purposes and was carried out in similar situations in contemporary Europe. This type of chequered solution was favoured by military engineering and as such found its extensive use in Portugal. As already analysed, it was used for more than one century in Portugal and its empire: a grid arranged around a square, extending in chequered block modules. The Portuguese military engineers used the grid as a resourceful option for town development: it favoured a balanced relationship between the different locations and also allowed smooth urban extensions. The monotony of the ensemble was never an issue for those pragmatic urban planners. What was judged as a *poor* and *unimaginative* town planning solution in Edinburgh, revealed itself to be the maturation of a long town planning practice in Lisbon. The self-contained character of both examples, rather than a disadvantage is a resourceful expedient taking into account the site and, in the case of Lisbon, the urban

character of the pre-existing two main squares. Meade is right when he states the following with regard to the New Town adopted plan: "The success of Craig's scheme owes much to his simple but effective use of the site, with the central axis terminated by squares on the crown of the ridge and transverse streets connecting the parallel Queen and Princes Street on the slopes" (18). Or, as Youngson defines it: "entirely sensible, and almost painfully orthodox" (19).

These considerations should be taken into account when analysing the authorship of the New Town plan: the similarities between the two designs and projects and their contemporaneousness are important data, which should not be disregarded.

James Craig is often described as a young and unknown architect who unexpectedly acquired status through the New Town's winning plan: "An obscure young man then, the New Town competition of 1766-67, was to bring him sudden fame" (20). His previous work is not completely known and it is not clear how he came to be the first architect to work on the New Town project. Despite his youth, Craig's name appears in 1763 on a "Plan and Elevation of the Bridge intended to be built over the North Loch Edinburgh", which is represented with "A plan intended to illustrate the advertisement for a contractor to build the bridge" dated 1752 (21). This fact evidences that Craig's involvement in the New Town project had started prior to the City Council competition.

Craig's following work with regard to the New Town enterprise discloses a consistent understanding of a particular town planning approach: the circus plan, which he developed through the whole building process, definitely reveals an underlying proposal. The "Plan for Improving the City of Edinburgh", dated 1786, is a remarkable piece of enlightened town planning thought: it combines meticulously utilitarian and aesthetic spatial elements revealing a maturation of ideas and skills with regard to the subject (**Illustration 72**, p. 178). Craig's possible involvement in the late eighteenth century developments in Glasgow show a different line of approach: the use of the grid-scheme. However, these urban extensions were being carried out in this Scottish town from the mid-eighteenth century following the same geometrical pattern: there was "the evident concern that planned extensions of the city fabric should be geometrically (and therefore, perceptually) integrated with the existing fabric" (22). Moreover, the use of the grid in Glasgow does not follow clearly Edinburgh's example, particularly in the case of the second New Town on which Craig might have worked. As Walker states: Glasgow shows "...an orthogonal urban grid which is open-ended, expansive and indifferent, a grid in which street-space is infinitely extensible" (23).

As already discussed, Robert Adam was in Italy at the time of the earthquake in Lisbon and showed a genuine interest in the possibilities opened by its rebuilding. Both John and Robert Adam contributed to the conceiving of the New Town project. Nevertheless, it is not clear the nature of the involvement of the former. Conversely, Robert Adam's work is largely known and reveals a very personal understanding of town planning following enlightened premises. However, these are not consistent with the Pombaline example: Robert Adam's projects (namely, Edinburgh's Charlotte Square and London's Adelphi) unquestionably emphasise the formal rather than the utilitarian (**Illustrations 73 and 74**). Also, Robert Adam's knowledge of the Pombaline plan is not documented.

William Mylne's tour in Italy coincided with Adam's stay in this country. Thus, Mylne was also in Italy when the earthquake struck Lisbon. His brother Robert (b. 1734 – d. 1811), who was travelling with him, knew through their father, Thomas Mylne, about Robert Adam's aspirations to be the architect of the new Lisbon: "...I am surprised at your seriousness about Mr. Adam's rebuilding Lisbon ... but I assure you [that] as an architect he makes no more figure than we do ourselves ..." (24). Again, there is not any available evidence of the brothers' interest in the project effectively carried out in Lisbon. Also, William Mylne's involvement in the New Town project is not clear. As mentioned above, on October 22, 1766 the Bridge Committee commissioned Mylne to draw a "Plan of the new Town and Improvements on the North of the City". It was issued seven days later. Although it has been identified as the second version of the New Town plan in John Laurie's map, the original is lost and the attribution of the adopted plan to Craig is well documented as the Town Council Minutes and the printed versions of the adopted plan substantiate: "If he [William Mylne] had been requested to undertake so large a task as the design of the New Town, we would surely expect this to show up in the council's accounts. There is no such account and no such payment was made" (25). Until more evidence comes to light it is very difficult to measure the extent of Mylne's responsibility in the final design for the New Town.

The crucial question to be answered is: why such a plain and pragmatic scheme was selected to give shape to Edinburgh's hopes of extension and improvement? Meade seems to provide the answer by stating: "Moreover Craig was not required to produce a grandiose plan on the lines of those illustrated in Patte's *Monuments érigés à la gloire de Louis XV*, but a viable housing scheme to relieve overcrowding of the Old Town as well as providing suitable accommodation for its wealthier inhabitants" (26). To this remark we might add that the need was for a low cost plan easy to carry out and able to promote Edinburgh's urban qualities. In fact, these two premises make the articulation between *The Proposals* of 1752 and the equation: a public project for a residential area.

**73. Charlotte Square (1792-1820), Edinburgh.** Architect: **Robert Adam**. Published in Youngson, A. J., *The Making of Classical Edinburgh*. Edinburgh: Edinburgh University Press, 1993.

**74. The Adelphi (1768-72), London**. Architects: **Robert** and **James Adam**. Demolished in 1937. Published in Summerson, John, *Architecture in Britain 1530-1830*. New Haven and London: Yale University Press, 1993.


**75. The City of London after the Great Fire.** Inscriptions: "A Plan of the CITY and LIBERTIES of LONDON after the Dreadful Conflagration in the Year 1666. The Blank Part whereof represents the Ruins and Extent of the Fire; & the Perspective that left standing"; "E. Bowen sculp." (1770). **BL (London. Maps and charts – Fire, 1660, 1770).**

The project for the Edinburgh New Town was a major enterprise, which showed a distinctive approach to the emergent ideas regarding town planning. As such, it cannot be solely viewed from a Scottish perspective. It was manifestly a product of the Scottish enlightened thought, which was giving shape to Scotland's aspirations of international recognition within the political context of the Union Act.

Thus, it is possible to trace important conceptual links between the New Town and the Pombaline Lisbon projects: a spatial and architectural rational scheme was required able to improve the city's image and to serve well its practical purposes. Possibly this convergence of intents was acknowledged by some of the architects involved in the building of the New Town. Most certainly, as the theoretical framework was the same, the coincidence of purposes determined a similar town planning approach. These factors could explain the similarities between the two projects: a simple and flexible grid developing around three main roads flanked by two squares; the use of the block as the structuring urban element and the architectural sobriety of the ensemble, stressing the coherence of the plan.

### 4.2.3 London[6]

The rebuilding of the city of London has been extensively discussed (1). The purpose of this study is to consider it in the context of the present town planning comparative analysis. Therefore, emphasis will be put upon the relationship between London and Lisbon's rebuilding efforts in terms of town planning options. Also, we will analyse the importance of London's example for the development of modern town planning thought.

John Evelyn's (b. 1620 – d. 1706) comments regarding the state of London's architectural and urban structures just before 1666 picture a dreary reality: "That this Glorious and Ancient City, which from wood might be rendered Brick, and ... from Brick made Stone and Marble; which commands the Proud Ocean to the Indies, and reaches to the farthest Antipodes, should wrap her stately head in clouds of Smoake and Sulphur, so full stink and Darknesse, I deplore with just Indignation. That the Buildings should be compos'd of such a congestion of mishapen and extravagant Houses; That the Streets should be so narrow and incommodious in the very center, and busiest places of Intercourse: That these should be so ill and uneasie a form of Paving underfoot, so troublesome and malicious a disposure of the Spouts and Gutters overhead, are particulars worthy of Reproof and Reformulation; because it is hereby rendered a labyrinth in its principal passages, and a continual, wet-day after the storm is over " (2). This well-known passage is simultaneously a vivid account and an ideological statement. Interestingly, it

[6] Notes p. 200

uses King James I's fundamental town planning premise as the opening axiom. Evelyn establishes a connection between the idea of a city as a reputable capital of a prominent empire (hence the image of Rome) to the concept of public utility. As already mentioned, these two concepts were part of the contemporary European thought with regard to the city. However, in the second-half of the eighteenth century the latter superseded the former. In London this process had a particular expression.

As referred to above, from the thirteenth century, London benefited from building norms regarding the prevention of fires and the use of deficient materials and structures. Following the European trend, the system of building rules inside the Cities of London and Westminster was significantly more restrictive than in the peripheral areas. Despite the building legislation, the Crown and the city's administration were not able to prevent the unruly proliferation of buildings cramping the already narrow urban maze. Aware of the negative effects of this situation, King Charles II decided to put into action a program aiming for the enlargement of some of its main streets. The Great Fire came suddenly, putting a stop to the delay in developing this scheme (**Illustration 75**, p. 181). By the same period, Lisbon was initiating street enlargement works and carried out the opening of an important via linking the downtown with the developing western areas. As it happened in Lisbon, approximately a century later, the measures taken after the Fire reveal the maturing of an idea of city and of building and legal procedures.

The Crown and the Parliament supervised the rebuilding of the city of London, although it was directly controlled by the city administration. All of the attempts to take advantage of this opportunity to provide the city with a new and regular plan were frustrated. The Crown and the city corporation considered seriously this option. However, the financial burden of such an enterprise and the resulting legal problems prevented its approval. In this context, the prospect of a more spacious and commodious city was not seductive enough for the private interests. Ultimately, there was a general concern with the negative economic and financial consequences of a long-lasting and strict building process: "but the calamities of the present circumstance were so great and numerous, that the pleas of elegancy and beauty could not be heard, and necessity and conveniency took place of harmony and magnificence" (3). In London, a regular plan was seen by some as a plea for embellishment, whereas in Lisbon it was considered, mainly, as a vital instrument. This apparent paradoxical selection of options is, obviously, linked to the different stages of the European historical process: the established private interests pressed for a swift solution; in Lisbon, the Crown's economic program of reforms demanded a utilitarian urban scheme.

The character of the rebuilding of the city of London is an interesting result of a combination of the following elements:

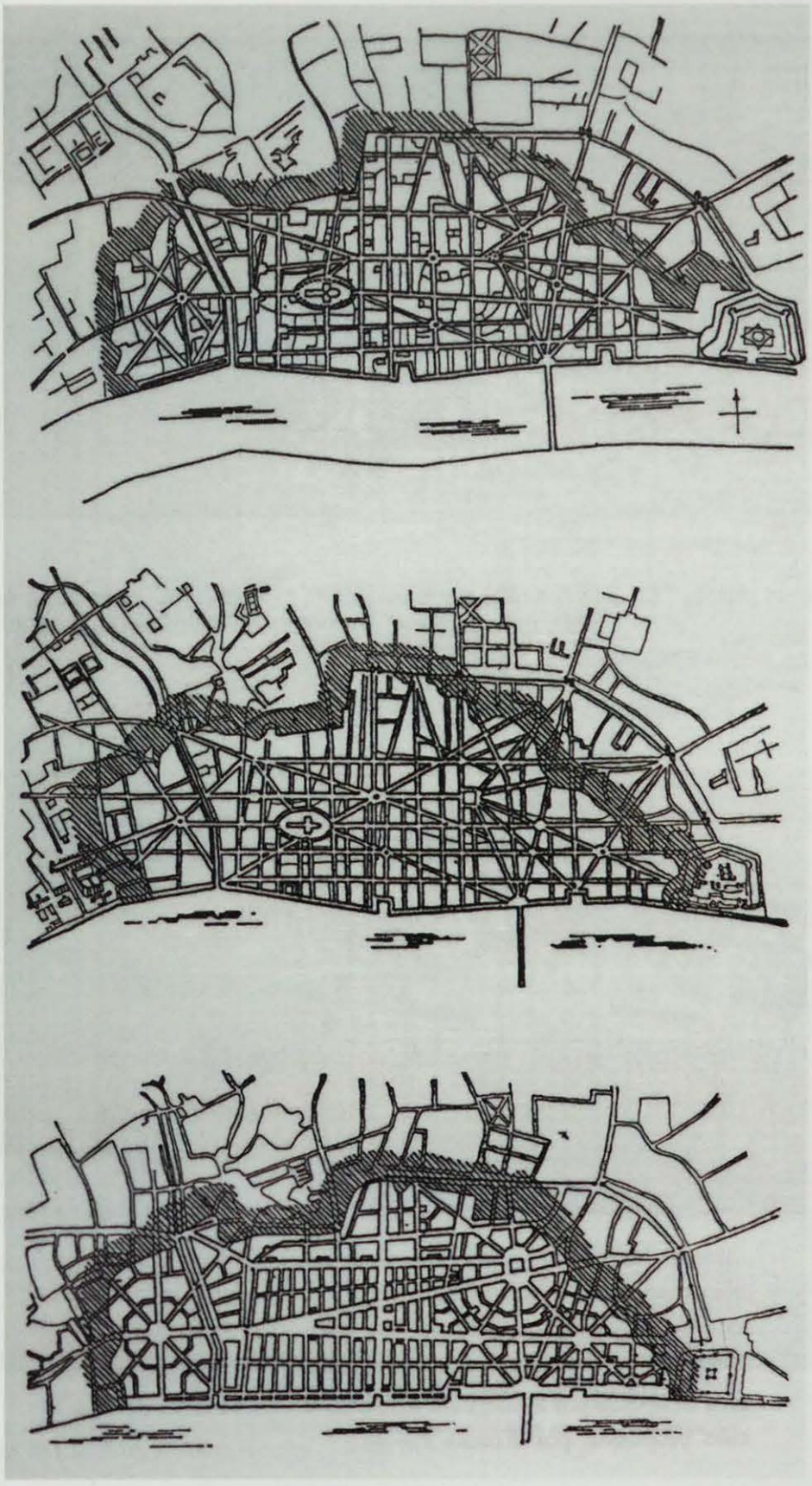
- The social and economic circumstances of contemporary England;

- The national architectural and town planning expertise and experience;
- The European theoretical legacy.

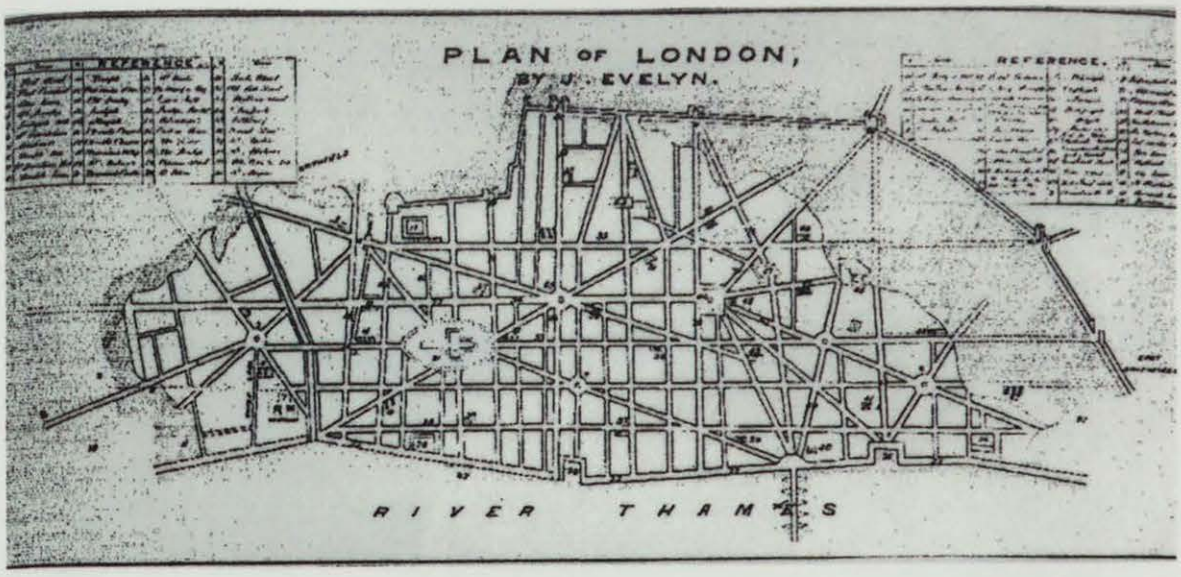
Its main guidelines were defined according to premises which had been developing throughout Europe from the late fifteenth century: "... whether streets shall be laied out in places where they formely were, or in such other as shall be demonstrated to be more for the **beauty** and **convenience** of the city, being that no man can tell how to offer any acceptable design till this bee determined, nor any one to build till that design be agreed upon" (4). Although the use of a regular plan was not successful, a significant attention was given to particular and fundamental technical and legal town planning issues. The compromise established between these two aspects cannot be seen as the failure of a progressive project. On the contrary, it expressed the development of a pioneer town planning process that combined early-modern and modern approaches.

The plans submitted to King Charles II (1660-1685, b.1630) by Christopher Wren (b.1632 - d.1723), John Evelyn (b.1620 - d.1706), Robert Hooke (b.1635 - d.1703), Peter Mills (c. 1600 - 1670), Richard Newcourt and Valentine Knight represented, thus, fruitless attempts to regularize the city's medieval layout (**Illustrations 76, 77, 78, 79 and 80**). However and despite the extensive bibliography on the subject, the character of these proposals deserves a particular mention. The Renaissance "ideal city" designs and the recent town planning projects developed in Rome and Paris are referred to as the main sources. With regard to this issue, Porter states: "The achievements of the popes at Rome provided a paradigm for a city developed by its rulers who were anxious to provide a capital that would enhance their own dignity. This was indeed a common ambition in Western Europe and led to the transformation of Turin, for example, although many rulers, including the French monarchs, were limited to piecemeal and restricted developments within the existing city" (5). Based in the architectural and town planning theoretical production of the sixteenth century, these examples show undoubtedly an approach which suggests already a baroque understanding of the structuring and functioning of the city.

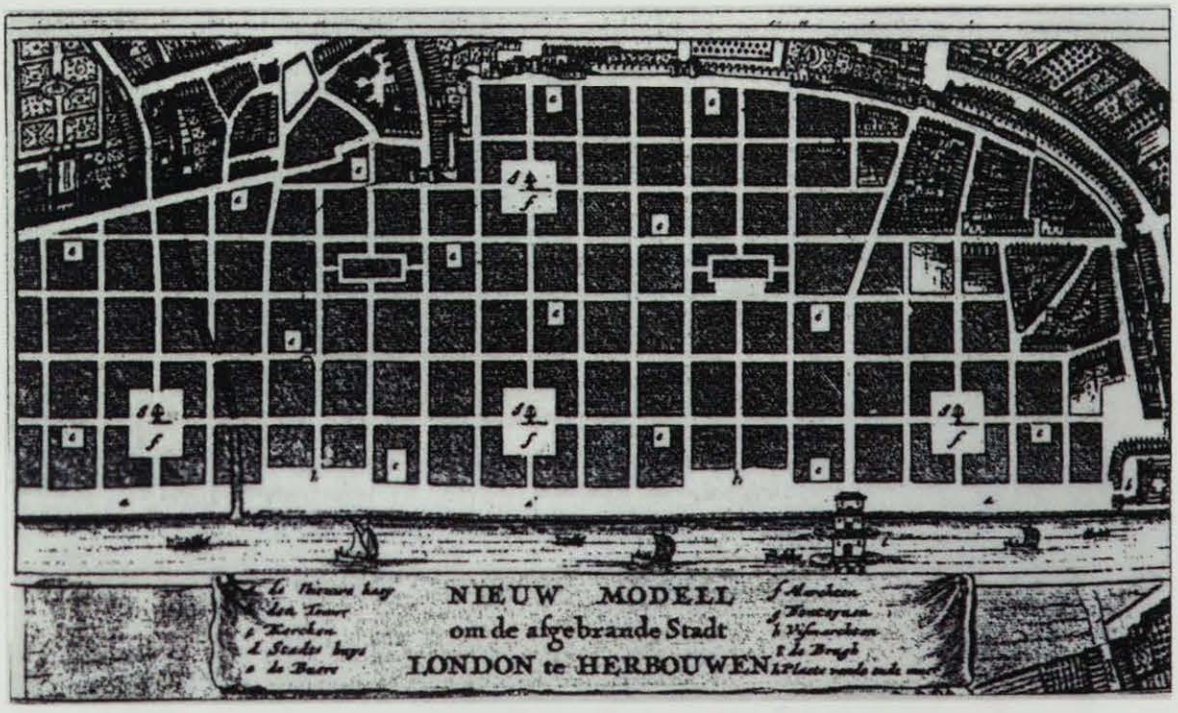
Wren and Evelyn's plans clearly use all of this information in conceiving of their proposals. Wren's plan pictures a more baroque approach: the articulation of the grid and the axial elements creates some focal points animated by architectural units. The location of St. Paul's cathedral and the city churches are part of this town planning program. Nevertheless, Wren's plan uses baroque town planning drawing mainly on Rome, to produce a utilitarian scheme. The symbolic representation of the political power expressed in Rome and Paris is absent in Wren's plan: his purpose is to give spatial dynamism to the economic heart of London. The two converging avenues, at which confluence St. Paul's cathedral is placed, animate an urban layout centred in the principal square located to the West. Here, Wren places



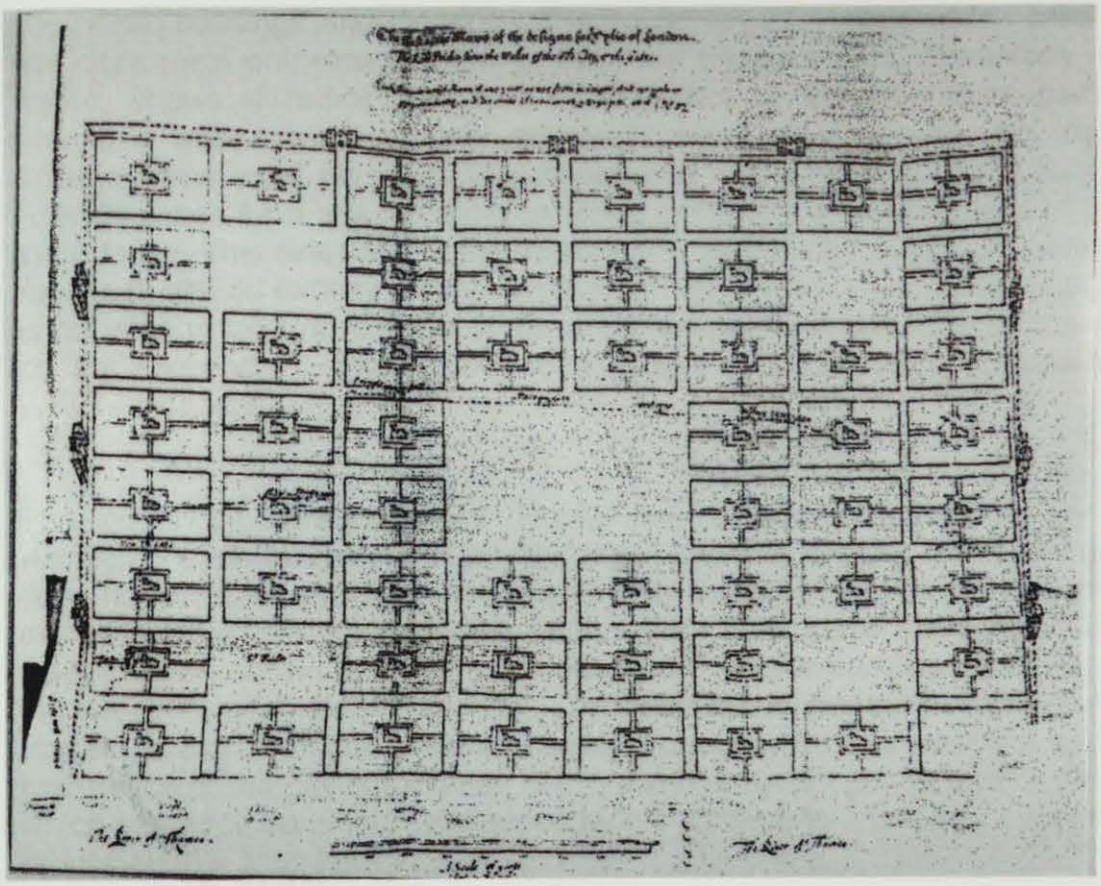
**76. Plan of London. John Evelyn** (1666). First and second schemes. **Plan of London. Christopher Wren** (1666). Published in Benévolo, Leonardo, *Diseno de la ciudad – 4 El arte y la ciudad moderna del siglo XV al XVIII*. Barcelona, Editorial Gustavo Gili S.A., 1982.



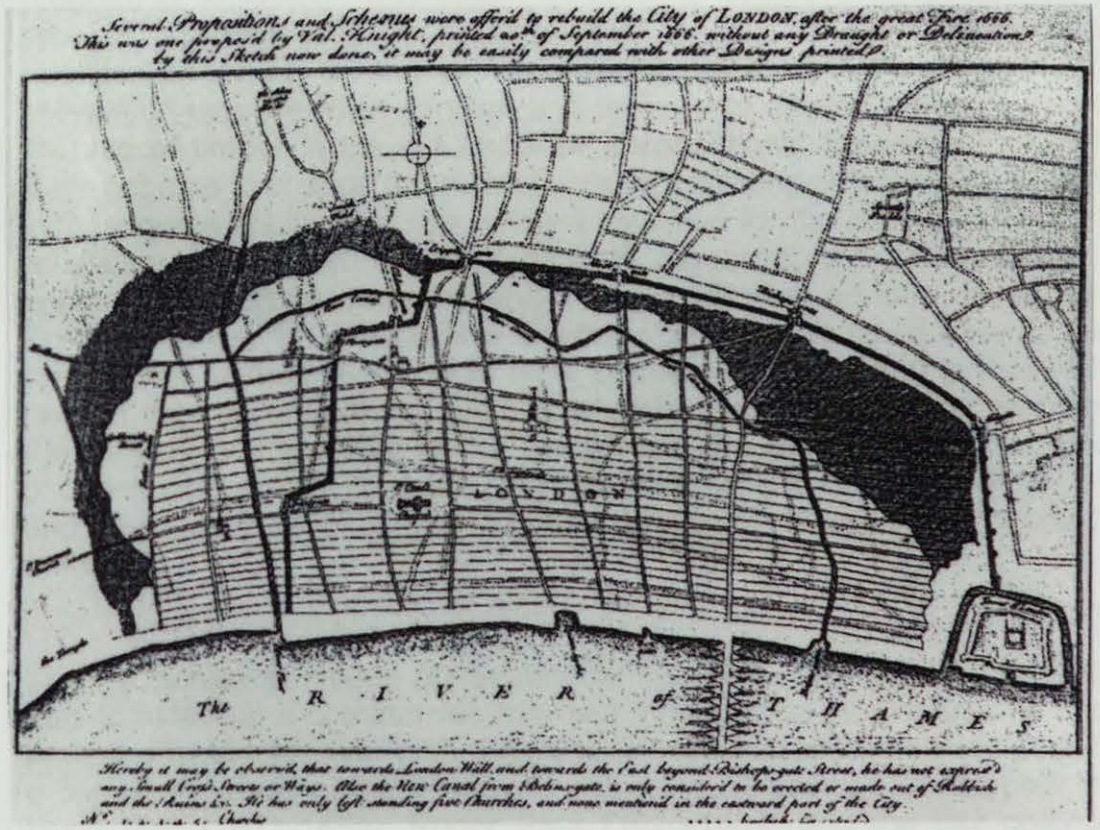

**77. Plan of London. John Evelyn** (1666). Evelyn's third scheme. 19th century copy. Published in Porter, S., *The Great Fire of London*. Stroud: Sutton, 1996.




**78. Plan of London. Robert Hooke** (1666). Published in Porter, *op. cit.*



**79. Plan of London. Richard Newcourt** (1666). Published in Porter, *Idem.*




**80. Plan of London. Valentine Knight** (1666). Published in Porter, *Ibidem.*

the public buildings and develops a radial scheme of roads which links it to the city's main entrance opening to the river. Evelyn's plan, apparently more sober, shows a rather confusing combination of baroque town planning elements with a strict rational approach. More appropriately, he tries to include some axial elements in a chequered layout without much success: "His ideal was for a regulated city in which uniformity of building was of prime importance. This extended to the taverns and victualling houses, for 'even the meanest, should exactly respect uniformity" (6). Evelyn's Cartesian approach is not able to take advantage of the radial elements: in his scheme the latter do not succeed in creating the same spatial dynamism and coherence of Wren's proposal.

The plans by Newcourt and Hooke are extremely influenced by the renaissance models of the "ideal city". As such, they impose a scheme which does not consider either the main features of the old layout or the topography of the site. However, whilst Newcourt's plan is a mere abstract exercise, Hooke's plan shows a better articulation with the surroundings, namely with the river. From all of the proposals, this plan is the closest to the Cartesian model: its aim is strictly utilitarian. In all probability for this motive it had the preference of the city corporation (7). Valentine Knight put forward a project, which seems to be highly determined by his scheme to financially support the rebuilding (8).

Although the plans were never implemented, an extensive and important program of legislation was issued in order to secure a controlled and swift process. As referred to above, from 1580 a series of legal documents were released in order to control the building within the city perimeter. Fire prevention was the main concern and there were several attempts to reduce the use of timber in the old and new constructions. However, these efforts were not able to change the bulk of London's building structure (9). Despite its inconsequent application, this process was vital for the legal approach to the rebuilding of London: it simultaneously expressed an awareness of the contemporary urban problems and the structuring of an idea of the city. As Porter stresses: "past responses to similar occurrences could have served as reference material, nevertheless none of these situations had to deal with the level of destruction reached in London" (10). The swift and clear response to the tragedy and the role of the Crown and the Parliament in this process unquestionably uncovers a structured experience in dealing with urban issues and the existence of a town planning program. Pragmatism directed the enterprise.

The Proclamation issued on September 13, 1666 by Charles II ingeniously tries to establish a compromise between a new urban project and the need to protect private interests. With regard to this latter aspect, the King demanded a complete survey of the destroyed properties, appointing Christopher Wren, Hugh May (1621-1684), Roger Pratt (1620-1684) and the city corporation nominees Robert Hooke, Edward Jerman and Peter Mills as supervisors.

These commissioners were thereafter directly in charge for the surveying of the whole reconstruction process.

The first issues to be addressed were immediately connected with fire prevention: the exclusive use of stone and brick and the widening of the streets. The intention to improve the layout of the old city is explicit in the demand for proposals for a new plan. The failure of the survey and of the latter enterprise, as already mentioned, does not discredit the extensive legal efforts towards a controlled rebuilding. The "Act for the Rebuilding of the City of London" issued on October 8, 1667 reveals the Crown and the Parliament's rebuilding strategy:

- The stipulation that all of the buildings had to follow some general requirements according to their different locations (by-lanes, streets and "lanes of note"; high and principal streets) or significance (ordinary buildings and "mansions houses");
- The strict control of these prerequisites by surveyors defined as: "discreet and intelligent person or persons in the art of building";
- The enunciation of the building norms: number of storeys; thickness of the walls and the building materials used in the façades;
- The widening of some of the principal streets;
- The dislodgment from the principal streets of the activities which could endanger the surrounding;
- Specific indications were given with regard to the construction of a sewerage system and its funding;
- The reduction to thirty-nine of the number of churches to be erected and the use of the remaining areas as a financial asset to assist their construction.

To deal with the difficult task of the property rights, a Court was established, known as the Fire Court, which assisted the appointed surveyors. The legal dispositions regarding this issue and the functioning of this Court completes the program of the rebuilding.

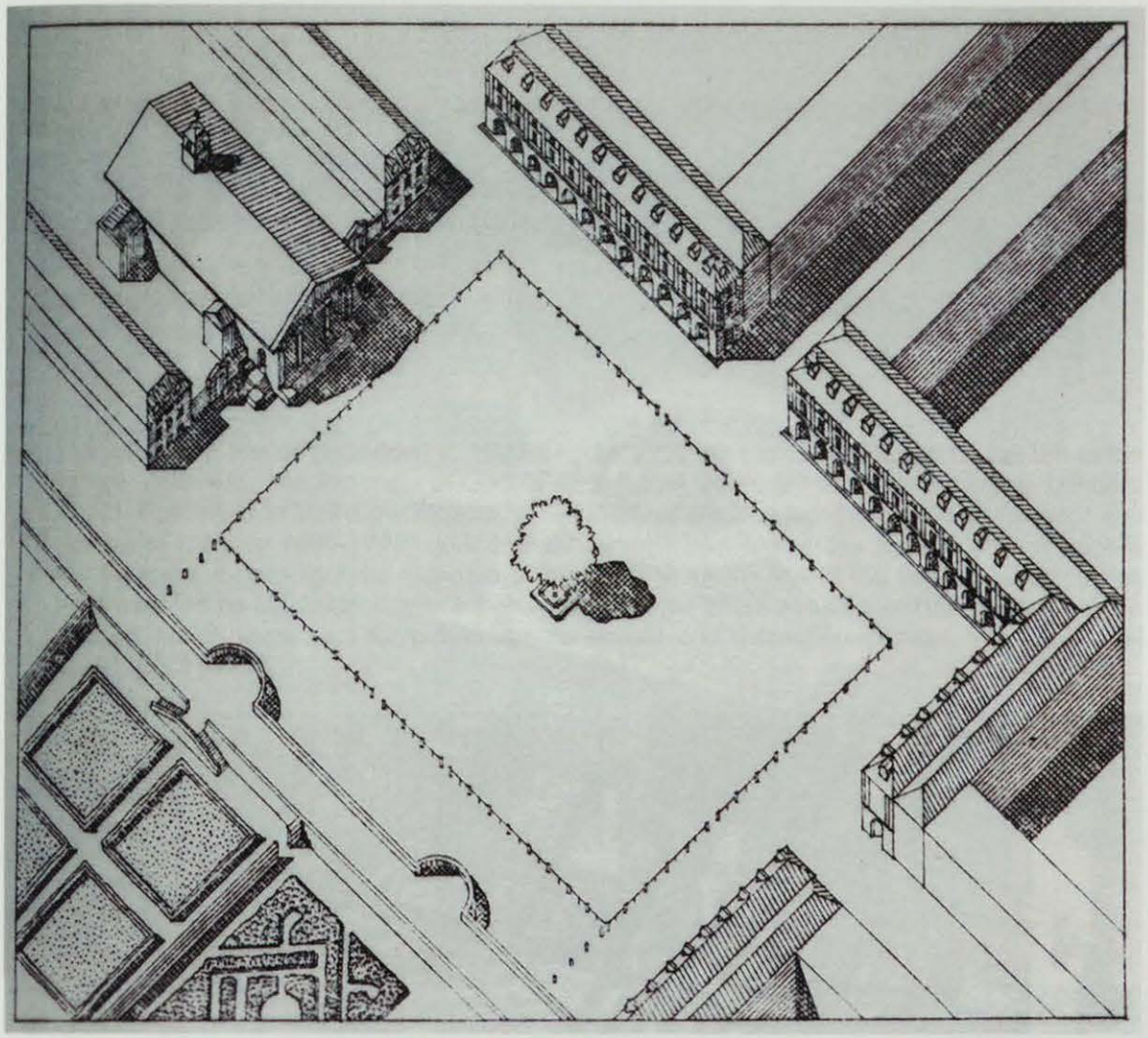
These legal dispositions not only shaped the rebuilding process but also generally regulated London's urbanization up until the late eighteenth century. The conciliation between public and private interests was an important matter for the administration of every large European city from the late medieval period. The centralization of political power in Europe began to give to this issue a particular approach: State strategies were imposed on private interests and were seen as the ultimate expression of public convenience. The rebuilding of the city of London was undeniably a different process: there was the search for a right balance between the traditional and the novel. This was expressed in the building legislation, in the use of the technical expertise and in the relationship established between the building agents. The medieval and early modern legacy was redefined in terms of social improvement and economic and financial development. This process was extremely relevant in

the context of not only early modern but also modern town planning procedures and thought. The result was, thus, more significant than a mere "medieval growth crystallized in Stuart and Georgian Brick" as stated by Summerson (11).

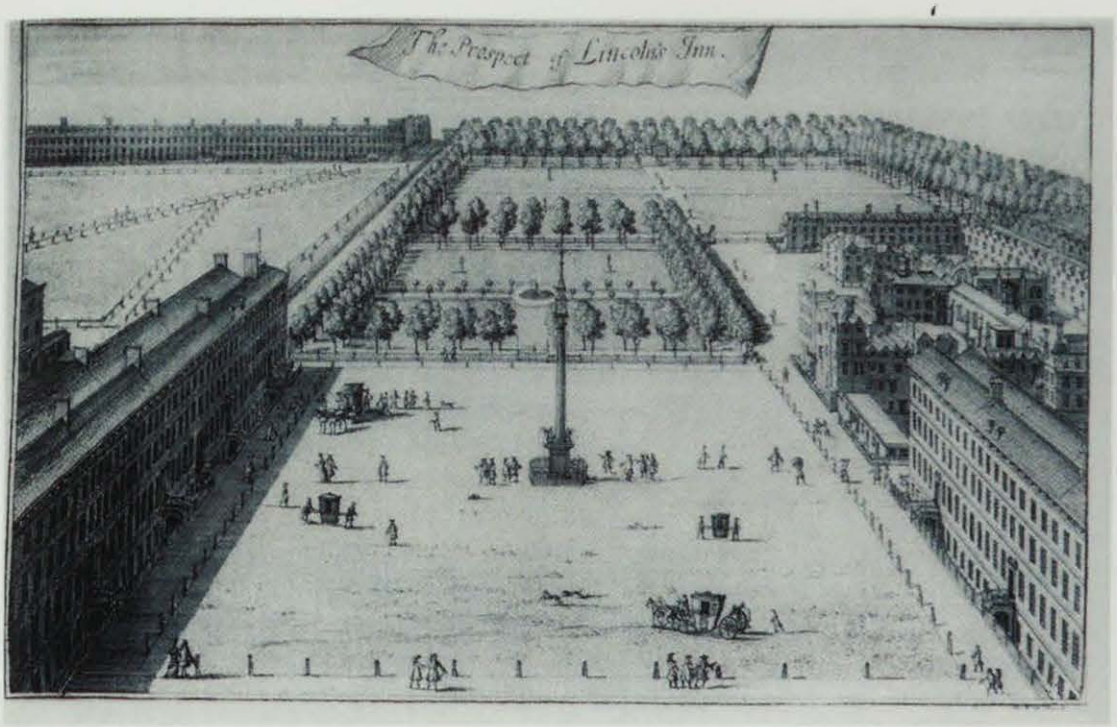
This same character shaped London's urban expansion. There are two different but associated aspects of the history of London after 1666: the rebuilding of the city and the growth of the capital, particularly to the West End. The diverse town planning schemes are not part of different town planning perspectives but of a smooth and efficient urbanization as far as the private interests are concerned.

Elizabeth Mckellar questions Summerson's analysis of the evolution of the London terrace house and his concept of the London square. As already referred to in the previous section, Mckellar considers the late seventeenth and early eighteenth century London house as a product of a transitional period. McKellar also claims that the London square between 1660 and 1720 cannot be described solely as either a spatial or an architectural scheme: "An ambiguity as to the square's status and character in this period arose from several things: its heterogeneous architectural sources; a confusion as to its purpose and function; and its place within the debate over the growth of the city at this time" (12). According to Mckellar, apart from Covent Garden, which was built following the European piazza model, the first London squares were the reflection of a transitional period: open spaces were gradually surrounded by buildings and their use was not a clear issue either for the citizens or the local authorities. This was the case of Lincoln's Inn Fields, which development was strongly conditioned by the "communitarian" character of the area as opposed to the "authoritarian" nature of Covent Garden (**Illustrations 81 and 82**). For this author, the London square as a secluded residential unit was a result of these two models and appeared as a town planning prototype after 1720 with the building of Hanover Square (1717/19), Cavendish Square (c. 1720), Grosvenor Square (1725 onwards) and Smith Square (1726) (**Illustration 83**). Mckellar points out that these developments were a result of the new social demands regarding "gentility" and "acceptable behavior". The social character of the London square is already present in the building of Covent Garden and, later, of St. James's Square and Bloosmbury Square (**Illustration 84**). However, only after 1720, this trend was reinforced and defined with precision: "The increasing ornamentation and design of the square was partly the outcome of the beginnings of the idea of the square as a garden but also a practical, physical means of effecting social exclusion and control" (13). It can be added that all of this process responded to the need to extend London and to do it in the context of a developing capitalist dynamic. The property system and the technical expertise available completed the picture.

The relationship between the technical and building agents and the architectural solutions are vital elements to understand the whole process.

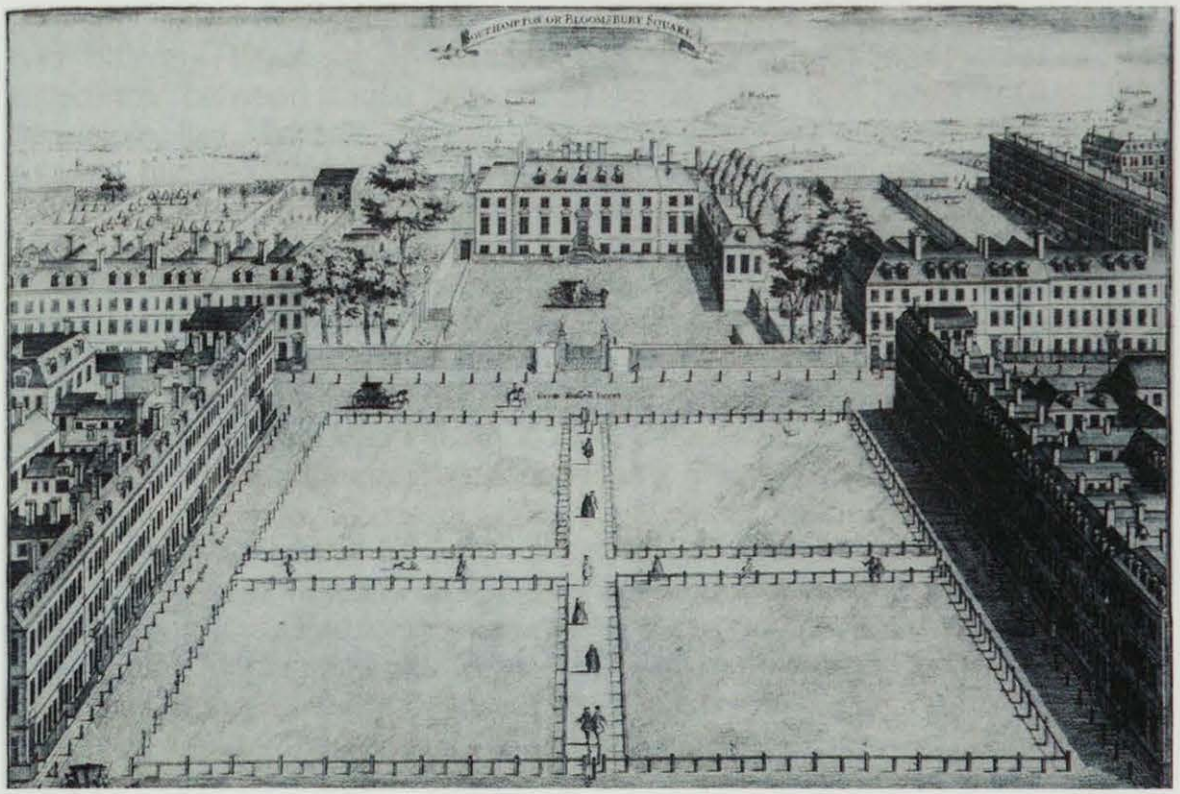


**81. Covent Garden piazza (London).** Begun: **1630.** Architect: **Inigo Jones**. Published in Rasmussen, Steen Eiler, *Towns and Buildings: described in drawings and words*. Cambridge, Massachusetts: M.I.T. Press, 1951.

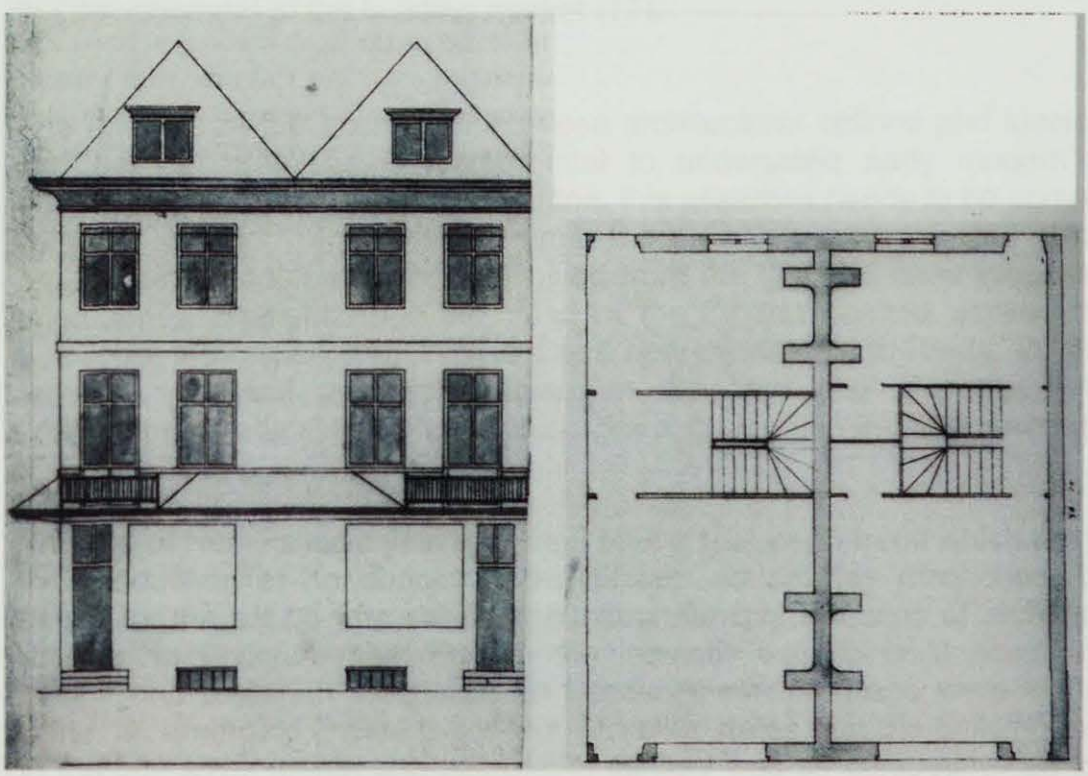



**82. Lincoln's Inn Fields (London) *c.* 1685-97**. Lincoln's Inn Fields is pictured on the left of the image. John Kip, *The Prospect of Lincoln's Inn* [Stow, John, *Survey*. Ed. J. Strype. London: 1720]. Published in Mckellar, Elizabeth, *The Birth of Modern London (the development and design of the city 1660-1720)*. Manchester: Manchester University Press, 1999. Lincoln's Inn Fields is a paradigmatic example of the "spatial ambiguity" of the first London squares as presented by McKellar. It was a particular example of the evolution of the medieval open spaces, which were kept for public use as leisure and recreational areas, into residential areas. **BL 1791d5.**

**83. Grosvenor Square (London)**. Malton, T., *Picturesque Tour*, 1792. Published in Summerson, John, *Architecture in Britain 1530-1830*, *op. cit.*



**84. Bloosmbury Square (London) in 1746.** Nicholls, Sutton, *Southampton or Bloomsbury Square*, 1746. Published in Mckellar, Elizabeth, *op. cit.* **British Museum.**

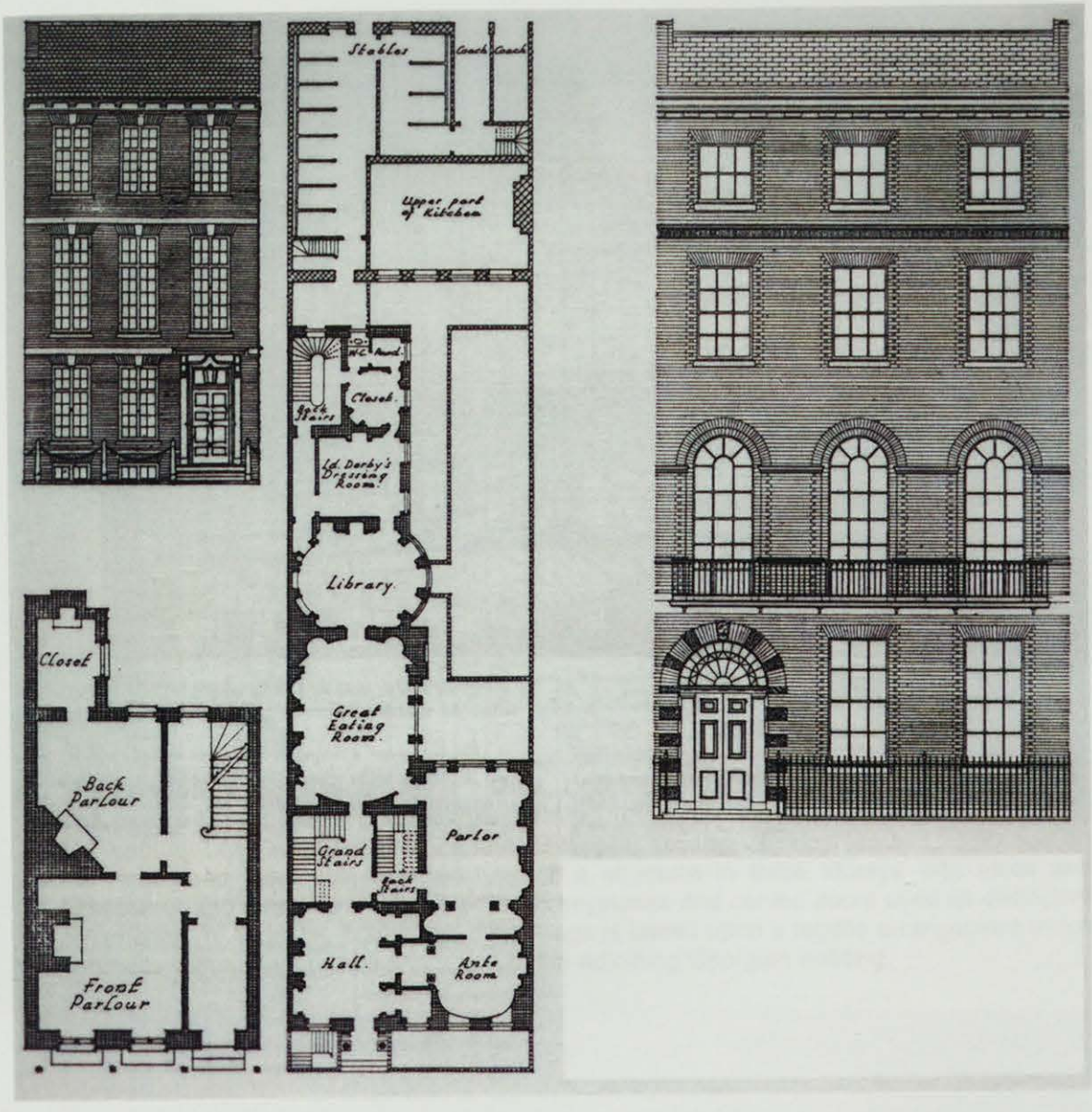


**85. Plan and elevation of a London house of the late 17th century**.
Published in Mckellar, Elizabeth, *Idem*.
**Bodleian Library, Oxford (MS Rawl. D.710 fol.17v.).**

The speculative builder became an essential element of the latter. There were two different types of speculative builders. Summerson establishes the difference between those who invested in land and houses (e.g., big financiers, like Nicholas Barbon) and those who only speculated in houses (mainly building craftsmen) (14). A trade network was established which started with the big financiers, who needed to invest a large amount of capital and the master builder who could take on from the former and use only his skills to make some profit. The houses were built and sold immediately, sometimes uncompleted. The craftsman had a prominent role in the rebuilding of the city: experience and knowledge were favoured within a pragmatic context. The same can be applied to the role of the military engineers in Lisbon's urban development. In London, the development of the building market had a fundamental impact on the master-builder's status; from a medieval craftsman, whose activities were strictly controlled by the different craft corporations, he became an individual and active building agent. Mckellar stresses that the craftsman's required skills were, at the time, of a different sort: they had to promote the business and as such they relied on a good understanding and use of the new building methods (15). The author is, obviously, referring to the development of architectural standardization which was promoted by the demand for financial profit: "The size and shape of the London house have been conditioned from the first by the economic need to get as many houses as possible into one street" (16) (**Illustrations 85**, p. 187 **and Illustrations 86 and 87**). Hence the character of the Georgian town house with its narrow façade, extending vertically and completed with its equally narrow and elongated court. However, this was a process which only attained its highest level by the eighteenth century. Its evolution accompanied the development of the building market (17).

The analysis of the interaction between architectural options and ideological and political premises is fundamental to understand early modern town planning thought. In the case of London, this assertion needs to be completed with the inclusion of another element: the capitalist dynamic. The classical architectural models in London evolved from the first Palladian proposals of Inigo Jones, cherished and promoted by the Stuarts' political aspirations, to functional prototypes combining old and new solutions and finally, to a more orthodox classical approach, based on the rigor and proportion of the architectural models. Neo-Palladianism developed within the latter context.

The rise of Neo-Palladianism benefited from a European trend which favoured the production of handbooks and treatises. As already mentioned, these aimed for the set up of a coherent although flexible selection of architectural models. In Enlightenment Europe the leitmotiv was to build according to quality and utilitarian standards. In London these premises were observed within an emerging capitalist context. Mckellar states that the building market in the late seventeenth and eighteenth century was as competitive as today, although it was structured on more consensual criteria with regard to cultural models (18). It is exactly the nature of the relationship established between the enlightened approach to the city and the speculative economic context




**86. Plan of Lord Grosvenor's house on Grosvenor Square and façade of a house on Baker Street built after the Act of Parliament of 1774**. Published in Summerson, John, *Georgian London*, 1945 and *Benévolo*, Leonardo, *Diseno de la ciudad – y el arte y la ciudad moderna del siglo XV all XVIII*. Barcelona: Editorial Gustavo Gili, SA, 1982.

**87. The London House (Queen Anne's Gate, London, SW1).** Published in Mckellar, *Ibidem*. The picture shows the different architectural approach expressed in the late 17th and early 18th century London house and the later Georgian building developments. The houses on the right hand side, built in 1704, picture a structure in three storeys with attics and basements and a façade marked by carved keystones and carved doors used as distinctive ornaments. As Mckellar, points out, their image is based upon a façade arrangement which contrasts with the rigour and proportion of the adjoining Georgian building.

where it developed that characterizes the town planning process in London. The main role of the private initiative and the lack of a global plan did not exclude the existence a program for the city and its architecture: the main enlightened notions of regularity and proportion in order to create a better urban environment were already present. There was clearly a program for the city and for its architecture: to build according to a standard of quality which implied regularity and proportion, aiming, nevertheless, for a safe and quick profit. These two realities evolved hand in hand in London. It should be stressed that we are in the presence of a relentless dynamic which, however, was just beginning. The building market, although its speculative character, was not yet able to contain the most daring enterprises: Nicholas Barbon, the first major speculative builder, who was active in the late seventeenth century, promoted the urbanization of central London often using irregular procedures and died leaving behind a considerable amount of debts. In the mid-eighteenth century, the Adelphi built by the Adam brothers as both an architectural and speculative venture failed as it mainly relied on the Crown as a client.

This latter project brings us to the rising role of the architect in Britain the second half of the eighteenth century. This phenomenon, personified mainly by Chambers and the Adam brothers, was not only promoted by European influence but mainly by the pressure of private demand. It is somehow contemporary with the reinforcing and up-dating of the legal dispositions with regard to urban infrastructures and the first legal dispositions allowing some architectural variety, within however a highly standardized building system (19). Late eighteenth century London saw, thus, the combined effects of the emerging prominence of the architect and the proliferation of the speculative builder: parallel to the development of the secluded character of the London square, there was the proliferation of smaller and highly standardized urban units aiming at other social groups. London's expansion was directed not only to the West but also to the North, the South and even to the unprivileged areas of the East End. In fact, there was an extensive building demand coming from all of the social classes, which accompanied the development of London as the economic and financial heart of the country. The relationship established between the aristocratic demand and the architect suggested already the emergence of the Romantic society: "Architectural styles had to be created to woo the eye and mind away from the country estate. Crucial in this were the more intimate designs and decorations created after 1760 by the Adam brothers, Robert and James, who imparted a fresh face to London buildings" (20). The same can be applied to a town planning strategy that reinforced and redefined the premises of London's development from 1666: the attention given to leisure areas, cultural units and, as above mentioned, urban infrastructures.

This process accompanies a general European concern with the city as a fundamental social unit. As such, it is contemporary with the major Enlightenment ventures and theoretical urban approaches. Interestingly and revealingly are the critical texts of Gwynn, Ralph (Benjamin Ralph?, active

1763-1770) and James Stuart (b.1713 – d.1788) with regard to London. Despite their occasionally different perspectives, they ultimately express a general enlightened attitude with regard to the city: public convenience and national prestige could only be achieved by spatial regularity and architectural quality, which, in turn, implied global planning. National and European examples and the neglected proposals for the rebuilding of the city, particularly Wren's plan, were used as evidence and working material. Nevertheless, there was an inexorable process towards the capitalist system and this town planning approach was, in what regards the London's example, somehow chronologically misplaced. Given not only the long-standing difficulties in acting on the urban tissue of major cities but also of a trade and consumption motion, London had chosen to progress as "an articulation of several villages" as referred to by Noorthouck (21). The lack of a global plan had not impaired the development of a modern city, as seen by Enlightenment theorists.

In fact, following its own dynamic, the emergent capitalist society had been able to structure late eighteenth century London as the paradigm of progress and sophistication: "Here again I was struck by the excellent arrangements and system which the love of gain and the national good taste have combined in producing, particularly in the elegant dressing of large shop-windows, not merely in order to ornament the streets and lure purchasers, but to make know thousands of inventions and ideas, and spread good taste about, for the excellent pavements made for pedestrians enable crowds of people to stop and inspect the new exhibits ..." (22).

## Notes

## 4.1 Background and proposals

### 4.1.1 Lisbon

1. Manuel Telles da Silva (b.1696 – d.1771) was the child of the 4th earl of Tarouca, João Gomes da Silva (b.1671 – d.1738), Portuguese diplomat. Manuel Telles da Silva lived in Haia and Vienna. In this city, Teles da Silva served the Austrian Crown as President of the Netherlands Chancellery, Supervisor of the Royal Buildings and President of the Italian Chancellery.

2. "Lembrome, que naquellas suavissimas conversaçoins familiares, em que empregamos, para mim utilissimamente, alguns seroins, discorremos da povoação de Lisboa, e dos augmentos ou extensão da cidade, que não era do meu tempo e conhecimento; e com o pouco de luses que nisto me deixou V. Ex.ª, discorrendo materialmente haverá quazi dois mezes, com o Marques meu irmão, em carta familiar, lhe disse, que me pareceria conforme à regia providencia, bondade e equidade, preferindo sempre o publico, e favorecendo, quanto seja possivel, cada particular, ordennar de tal modo a proxima reedificação de Lisboa, que se emmendem muitas das antecedentes defformidades e descomodos, principalmente nos Bairros antigos, donde as ruas estreitissimas e tortuozas são igualmente feias e nocivas athé para a saude". Letter to Mr. De Carvalho, Vienna 22 February 1756, published in *Anais da Academia Portuguesa de História*, 2ª série, vol. 6, Lisboa, 1955, p. 357.

3. "Ao tempo em que sahi de Portugal me lembro que principiava a florescer em Lixboa hua fabrica de toda sorte de estofos de seda, cujo edificio posso hoje segurara a V.Exc.ª que valle muito mais per si só do que todas quantas há em Londres e suas vizinhanças, segundo tenho visto. Neste pays tanto que hu artifece tem os poucos cabedaes necessarios para comprar hum thear com os engenhos a ell pertencentes e a verdade que baste para se reputar de sorte que ache a credito os materiaes crus em que intenta empregarse para os diggerir pellos meyos da arte que professa, tem achado tudo o que podia dezejar para estabelecer hua manufactura e se enriquecer por meyo della dentro em poucos annos. Nenhu destes homens decipa o seo cabedal na despeza de hum nobre edificio. Coatro taboas de pinho podres formam as paredes e duas duzias de mal cozidas telhas fazem o tecto de hua fabrica em que laboram theares donde sahem estoffos custozissimos, como velludos lizos e lavrados, brocados e tissus". *Carta de Ofício a Marco António de Azevedo Coutinho em 24 de Setembro de 1741* (Official letter to Marco António de Azevedo Coutinho, 24 September 1741), published in Barreto, José (ed.), *Sebastião José de Carvalho e Melo, Escritos Económicos de Londres (1741-42)* (1986), p. 127.

4. Vila Real de S.to António, in the Algarve south coast, is a paradigmatic example of Pombaline town planning thought. This city was founded in 1774 and was designed to be an important commercial and fishing centre. It was developed on a green-field site and profited for the maturing of the Brazilian and Lisbon experiences. As such, it represents the most perfect combination of the elements that structured the Pombaline approach to the subject. See Correia, José Eduardo Capa Horta, *Vila Real de S.to António (Urbanismo e Poder na Política Pombalina)* (1997); Teixeira, Manuel and Valla, Margarida, *O Urbanismo Português – Séculos XIII-XVIII* (1999); Ferrão, Bernardo, *Projecto e transformação urbana do Porto na época dos Almadas, 1758-1813 (Uma contribuição para o estudo da cidade pombalina)* (1997); Alves, Joaquim Jaime B. Ferreira, *O Porto na época dos Almadas: arquitectura, obras públicas* (1988) and França, Marie Thérèse Mandroux, "Quatre phases de l'urbanisation de Porto au XVIII siècle", *Colóquio Artes* (Jul. 1972).

5. "Não é pois, descabida a tese ... de uma escola portuguesa de arquitectura militar, com características bem vincadas, à altura das suas vastíssimas responsabilidades, estendendo-se do estudo das matemáticas a domínios tão díspares, mas vitais, como a defesa, a náutica e a fundação de novas cidades" ("Thus, it is not incorrect the thesis ... of a Portuguese school

of military architecture, with well defined characteristics, able to stand up to its extensive responsibilities, which went from the study of the mathematics to subjects, although vital, as diverse as the military defence, the nautical sciences and the foundation of new cities") - Moreira, Rafael, "Do Rigor Teórico à urgência prática: a arquitectura militar", *História da Arte em Portugal – O Limiar do Barroco* (1986), p. 85.

6. See **Part I section 3.2, n.19.**

7. See França, José-Augusto, *Lisboa Pombalina e o Iluminismo* (1983), cap. IV, n.106: apart from the *Tratado de Ruação* and the *Dissertação,* this author refers to the following works concerning civil architecture: Oliveira, Valério M. de, *Advertências aos modernos que aprendem o ofício de pedreiro* ("Advise to the modern who want to learn the craft of mason"), 1739; d'EÇA, Matias Aires da Silva, *Problema de Arquitectura Civil demonstrado por ..* ("Problem of Civil Architecture exposed by ..."), circa 1770.

8. See Alves, Joaquim Jaime B. Ferreira (1988), *op. cit.* and França, Marie Thérèse Mandroux, *op. cit.* (1972).

9. "as estradas que conduzem a servidam de humas Povoações a outras devem sahir de hua Povoação em linha recta com as ruas centraes e principais da Povoação, e continuar a mesma rectidam athe outras Povoações, e entrar nellas fazendo a mesma linha recta com as suas ruas centrais". Seixas, Figueiredo, *Tratado de Ruação.* Published in Moreira, Rafael, "Uma Utopia Urbanística Pombalina ..." *Pombal Revisitado*, vol. II (1984).

10. *Idem*

11. "Rococó e Neoclasicismo mal assimilados, não radicando em nenhuma autêntica mentalidade de época ou de classe, cruzam-se, pois, na sua obra como exercícios de estilo, sucessivamente enxertados em uma infra-estrutura formal definida com rigor pela disciplina matemática do desenho" - *Ibidem*, p. 135.

12. "Mas não é no mesmo jogo de contradições, talvez apenas aparentes, que se elabora, no Porto dos Almadas, como na Lisboa de Pombal ou na longínqua Amazónia de Landi, esse artificial produto sintético que é o estilo chamado pombalino?" – *Ibidem.*

13. "A teoria geométrica da arquitectura expressa no Tratado da Ruação sugere-nos uma releitura da obra construída de Seixas em termos de um *Rococó racionalista*, em que os 'caprichosos ornatos de arquitectura', como ele gosta de dizer, aplicam-se como meros apêndices postiços sobre uma estrutura rectilínea" – *Ibidem.*

14. King D. João V had attempted to build a new political and religious centre in the western area of the city. However, probably for personal and financial reasons this project was not carried out. The king chose to refurbish the old royal palace in *Terreiro do Paço* and, in order to complete the architectural rearrangement of the city centre, he also built there a new cathedral: the *Patriarcal*. The king's dreams of giving form to a new capital city, comparable to the most significant European capital cities, was not totally accomplished. D.João V was the first Portuguese king, after D.Manuel, to envisage the building of a capital city as an urban and architectural expression of a specific political and economic project. This somehow frustrated project prevailed, although, in the division of Lisbon in eastern and western Lisbon, which D. João V enforced on the city's administration: the western city was religiously submitted to the new Cathedral, whereas, the eastern city, which included all the old medieval districts, remained linked to the *Sé*, the old medieval cathedral. Charles Fréderic Merveilleux, a French traveller who wrote "Memoires Instructifs pour un voyageur dans les divers états de l'Europe, avec des remarques sur le commerce et sur l'histoire naturelle" (Amsterdam, 1738), was in Portugal between 1723-1726 and dedicates part of its work to his staying in this country. He refers to a project cherished by the Marquis de Fontes, minister to king D.João V, to build a new city in Alcântara, near the district of Belém - See Rossa, Walter, *Além da Baixa (Indícios de Planeamento urbano na Lisboa setecentista*) (1998).

15. "Que se queira renovar a cid.e baixa he p.ª mim indubitavel (...)" – *Dissertação*, Part II, 3 published in França, *op. cit.* (1983), p. 316.

16. "pelo que dos 3 modos da renovação da cid.e baixa, o 1.º arrazandoa toda e renovandoa toda, tenho por superior e melhor" – *Dissertação*, Part II, 4 (França, *Idem*, p. 317).

17. França, José-Augusto, *Ibidem*.

18. "E determinado e escolhido este lugar d'entre S.João dos Bemcasados e o conv.to de N. Sr.ª da Estrella p.ª o novo e real Palacio, me parece se deve principiar a renovação da cid.e de Lix.ª pelos edificios publicos, que são fabricados por conta da real fazenda, por serem os pr.ºs fundam.tos dos reaes subsidios quasi todos na marinha, p.ª o q largará S.Mag.e o seu Palacio antigo, assim como os Sr.es Reys seus antecessores havião largado os em q habitavão, q se achão hoje servindo de outros uzos: e poderá tambem formarse a caza da bolça do neg.o e tudo com as direcçoens, e formalid.es não só segundo as not.as das outras Cortes, mas com as melhoras q ocorrerem, e o bom discurso alcançar" - Maia, Manuel da, *Dissertação*, Part I, 15 (França, *Ibidem*, p. 314).

19. After the Fire, a survey of the destroyed properties was attempted, which, unfortunately, was not accomplished by the pressure put on a quick rebuilding by the private interests. See Reddaway, *The rebuilding of London after the Great Fire* (1940).

20. "E p.ª vencer o receyeio de faltar q.m queira comprar alguas areas, nem acredores recebelas pelas q deixarão, me ocorre responder q como a todos os homens de neg.º he m.to conveniente terem as suas habitaçoens proximas aos Tribunais deq dependem, a principiar S. Mag.de a renovação de Lx.ª (...) pelos edificios publicos (...) me faz persuadir q com este atractivo procurarão todos os q tiverem depend.ª dos taes tribunais alcançar sitios e areas p.a edificar (...)" - *Dissertação*, Part II, 7 (França, *Ibidem*, p. 318).

21. "Disse asima, p.ª que cada rua ou cada Freg.ª tivese alguma diversidad.e ao menos na côr da pintura do que por toda a cid.e baixa inteiramente uniforme, até p.ª não ficarem tão distintas as outras p.tes da Cid.e (...)", *Dissertação*, Part II, 5 (França, *Ibidem*).

22. See França, José-Augusto, *Ibidem*.

23. "A renovação da Corte de Turim, não he como alguns dizem, q fora arrazando Turim Velho, para fazer Turim novo, porque só foi acrescentar Turim novo a Turim velho, fazendo em hum sitio plano contiguo a Turim, hum aditamento a Turim, no que não havia difficuldade que vencer; donde venho a concluir q a renovação de Lisbôa destruida tem muito mais que ponderar que o augmento da de Turim acrescentada" – *Dissertação*, Part III, 14 (França, *Ibidem*, p. 325).

24. " Não posso deixar de acrescentar aqui ser muito preciza huma especial attenção na elleição das pessoas que hajão de ter por sua conta a execução desta difficultosa obra da renovação de Lisbôa baixa, para a guiarem livre dos embaraços q se poderão encontrar, ou incluir entre a correspondencia do antigo com o moderno, no cazo de haver alguma commutação do velho, com o novo que he aonde consiste a mayor difficuldade; (...) porque o formar huma Cidade de novo sem attenção mais do que a ella propria, unindoa a outra antiga como em Turim, será mais divertimento que trabalho; para esta execução me persuado estarem em primeiro lugar o Tenente Coronel Carlos Mardel e o Capitão Eugenio dos Santos de Carvalho, porque além de serem Engenheiros de profição, são tambem na Architectura Civil os primeiros Architectos" - Maia, Manuel da, *Dissertação*, Part III, 11 (França, *Ibidem*, p. 323). Carlos Mardel was a Hungarian military engineer who worked in Malta and came to Portugal in the early eighteenth century to work in the building of the Lisbon's aqueduct. He had a considerable importance in the architectural production in Lisbon throughout the Joanine period. Eugénio dos Santos was a Portuguese military engineer who had a prominent role in Lisbon's city council at the eve of the earthquake.

25. França, *Ibidem*, p.78.

26. *Ibidem*, p. 156.

27. *Ibidem.*

28. In 1779 an English officer, Alexander Jardine, expressed his views on this matter: "we should have expected a real great man to have encouraged the artists, foreign and native, by promoting a competition for the best plan. Instead of enforcing his own" – *Letters from Barbary, France, Spain, Portugal ...by an English officer* (1788), vol. II, p. 464. See also Delaforce, Angela, *Art and Patronage in Eighteenth-Century Portugal* (2001).

## 4.1.2 Edinburgh

1. See *Extracts from the Records of the Burgh of Edinburgh 1689*-1701; Armet, Helen, "Notes on rebuilding in Edinburgh in the Last Quarter of the seventeenth century" (1956) and Wood, Marguerite, "Survey of the Development of Edinburgh" (1974-1983).

2. Armet, Helen, *op. cit.*, p. 111.

3. Armet, Helen, *Idem, p.* 113.

4. *Extracts from the Records of the Burgh of Edinburgh*, 1665-1680.

5. "Act Regulating the Manner of Building within the Town of Edinburgh", 30 August 1698. See Armet, Helen, *Ibidem*, p. 114; *Extracts from the Records of the Burgh of Edinburgh 1689-1701* and Wood, Marguerite, *op. cit.*

6. Wood, Marguerite, *Idem*, p. 34.

7. Wood, Marguerite, *Ibidem.*

8. Sinclair, John, *The Statistical Account of Scotland* (1793), vol. VIII, pp. 648-649.

9. Defoe, Daniel, *A Tour through the Whole Island of Great Britain (Revised Edition, with the Tour through Scotland)* (1724-26).

10. Attributed to Sir Gilbert Elliot of Minto with, however, the fundamental contribution of George Drummond, Lord Provost of Edinburgh. See Youngson, *The Making of Classical Edinburgh* (1993), p. 3. The pamphlet was published in the *Scots Magazine* in 1752 (pp. 371-375).

11. *Proposals for carrying on certain public works in the city of Edinburgh* (1752).

12. *Idem.*

13. Adams, Ian, *The Making of Urban Scotland* (1978), p. 74.

14. From a letter by William Creech to Sir John Sinclair (December, 1792) quoted by Adams, Ian H., *op. cit.* (1978), p. 4.

## 4.1.3 London

1. See Sheppard, Francis: "All in all, the period between around 1530 and 1700 was the most momentous in the whole history of the capital, and by the latter date such social features of modern life in London as its vastness, its anonymity, its precariousness, and its underlying stability despite the prevalence of extremes of wealth and poverty were already manifest. ...London had travelled far towards becoming the prototype for modern metropolitan civilization" - *London a History* (1998), p. 125. Roy Porter also refers to this aspect: "As London grew and grew rich, it also assumed European statute in culture. Contemporaries

made play of the symbiosis between city and civilization ..." - *London a Social History* (1994), p. 59.

2. Porter, Roy, *London a Social History* (1994), pp. 67-68.

3. Smith, Adam, *The Wealth of the Nations*, book 2, p. 436.

4. Fisher, F.J., "The Development of London as a centre of conspicuous consumption in the sixteenth and seventeenth centuries", *Essays in Economic History* (1954-62), p. 198.

5. See Fisher, *op. cit.*, Porter, *op. cit.* (1994) and McKellar, Elizabeth, *The birth of modern London (The development and design of the city 1660-1720)* (1999), p. 31.

6. Noorthouck, John, *A New History and Description of London, Westminster, and Southwark* (1773), p. 522.

7. Mckellar, Elizabeth, *op. cit.*, p. 31.

8. With regard to London's growth in the 17th century, see Fisher, F.J. *Idem*, p. 197: "But the pride of the city fathers was tinged with dismay at the problems of housing, public health and poor relief which they saw mounting before them". On the effects of this situation on London's urbanscape in the eighteenth century, see Defoe, Daniel, *op. cit.* (1724-26) and Hawksmoor, Nicholas, "Letter to George Clarke" (1715) extract published in Mckellar, Elizabeth, *Idem* (from K. Downes, *Hawksmoor*. London: Zwemmer, 1959).

9. Knowles, C.C., "The History of Building Regulation in London 1189-1972", *Architectural Review* (London, 1972), p. 13.

10. Act of Parliament of 1589. See Knowles, C.C., *op. cit.*

11. As such, can be compared to the Manueline period in Lisbon. A century apart from each other, these two historical moments reflect the strong connection between political and economic ventures and town planning strategies in early modern Europe. In both situations, there was the intention of giving to the capital city an architectural and spatial environment able to secure (assure) its imperial leading role and to express the developing authoritative character of the political power. Manueline plans for Lisbon were developed within a transitional historical context (late fifteenth century and early sixteenth century), which made prevail a specific understanding of gothic architectural options (the Manueline style, which develops a very particular and exuberant decoration upon the formal solutions of the late gothic taste) as the physical expression of a Renaissance ideological project. Manueline urban actions are unquestionably included in a wider project of political and administrative centralization of the country. Overall, the Portuguese kings aimed for a ruling system able to control and direct an extensive expansionist enterprise. Therefore, notwithstanding its clear political symbolism, D.Manuel's town planning program is mainly marked by a strong sense of urban utility.

12. See Knowles, *Idem*.

13. Hart, Vaughan, "Lost Cities and Standing Stones: Stuart London and Georgian Bath", *The Architectural Heritage*. Vol. 6 (1996), p. 22. Hart establishes a parallel between the king's plan of works for London and Tommaso Campanella's *Civita Solis* (1623): "Situated at a point of prominence within the medieval city, and with the buildings which obscured its façades having been cleared by Jones, it was perhaps hoped that through the Cathedral refacing the entire city would feel the 'warmth' of its solar virtue, following the model of Campanella's temple", p. 23.

14. Hart, *op. cit.*, p. 15.

15. Tavernor, *Palladio and Palladianism* (1991)

16. Kubler, *Portuguese Plain Architecture – Between Spices and Diamonds* (1972), p. 105.

17. Although the eminent absolutist political character of king Philip II's sovereignty, his royal entry in Lisbon in 1581 can be included in the referred to ceremonies. This event was later repeated in 1619, to greet Philip III of Spain. At the time of the "Union Act" between the Portuguese and the Spanish Crowns, which was presided over by the Spanish king, Lisbon's bourgeois wanted obviously to secure the maintenance of their privileges. Therefore, the exhortation of the monarch's qualities as a guarantor of the city's and, moreover, the kingdom's privileges, were reinforced in both of Lisbon's entries. See Kubler, *op. cit.*

18. Summerson, *Georgian* London (1978), p. 27.

19. Tavernor, *op. cit.* (1991), p. 138.

20. Hart, *Idem*, *p.* 21.

21. See Mckellar, Elizabeth, *Ibidem.*

22. Tavernor, *Idem*, p. 126.

23. Summerson, *op. cit.*, p. 30.

24. As Summerson stresses, Covent Garden represented a building program which was understood by the Crown as "an ornament more than an extension" (*Idem*).

25. Rudé, George, *Hanoverian London 1714-1808* (1971), p. 12. See also Rasmussen, Steen Eiler: "The first real square was Covent Garden Piazza", *London the Unique City* (1982), p. 153.

26. Sheppard, Francis, *op. cit.* (1994), p. 176.

27. Summerson, John, *Ibidem*, p.35

28. Summerson, *Ibidem.*

29. Summerson, *Ibidem*, p. 38.

30. Mckellar, Elizabeth, *Ibidem*

31.Mckellar, Elizabeth, I*bidem*, p. 157.

32. Summerson, *Ibidem*, p.39: "the plots were let at a low ground rent on the understanding that the lessee built at his own expense a house or houses of substantial character, which house or houses, at the end of the lease, became the property of the ground landlord".

33. Interestingly, Lisbon never followed this trend and maintained up until the twentieth century a mix residential social character.

## 4.2 The plans: design and accomplishment

### 4.2.1 Lisbon

1. "A Baixa, bairro compreendido entre o Terreiro do Paço e o Rossio, traduz os próprios princípios do urbanismo que Manuel da Maia propunha à cidade martirizada. Foi nesta zona de cerca de 560 metros (sentido norte-sul) por 380 metros (sentido nascente-poente), nestes 212 mil metros quadrados, a que há que juntar as áreas das duas praças, que se jogou o destino da nova Lisboa" - França, José-Augusto, *Lisboa Pombalina e o Iluminismo* (1983), p. 95.

2. Obviously, the plans were ultimately addressed to Pombal as França ironically stresses: "The six projects that Manuel da Maia submitted to the Earl of Lafões, I mean to the king, I mean to Pombal ..." ("Os seis projectos que Manuel da Maia submeteu ao duque de Lafões, quer dizer ao rei, quer dizer a Pombal, ...) *op. cit.*

3. "A construção do Palácio, tida como uma prioridade, conceptualmente não era de forma alguma o eixo pelo qual a nova cidade devia ser alinhada": Rossa, Walter, *Para a além da Baixa ...* (1998), p. 46.

4. França, *Idem*, p. 137.

5. See Twiss, Richard, *Travels in Portugal and Spain in 1772 and 1773* (1775) and Dalrympe, W., *Travels through Spain and Portugal in 1774* (1774). Quoted in França, *Ibidem*, pp. 138-139.

6. França, *Ibidem,* p. 138.

7. França, *Ibidem*, p. 112.

8. França, *Ibidem*, p. 165.

9. "Organização e racionalização da produção formam, pois, a palavra de ordem que a conjuntura impõe, e isso é fenómeno novo": França, *Ibidem*, p. 162.

10. Silva, Raquel Henriques da, *Lisboa Romântica (Urbanismo e Arquitectura), 1777-1874* (1997), p. 63.

11. See França, *Ibidem* and Silva, Raquel Henriques da, *op. cit*, who presents in detail this important aspect of the Pombaline rebuilding process.

12. França, *Ibidem*, p.167.

13. See Coelho, Teresa Campos, "A Utilização de Madeira na Construção Pombalina – Alguns Exemplos" *Estruturas de Madeira Reabilitação e Inovação* (2000), pp. 101-132.

14. *Dissertação*, 3rd Part, 5ª - França, *Ibidem*, pp. 321-322.

15. Last version of the plans issued the 12 June 1758.

16. França quotes Jacome Ratton, who refers to the stench provoked by the deficient drainage of square sectioned sewerage pipes: *Ibidem*, p. 170.

17. See França, *Ibidem*, p. 169.

18. "A Praça do Comércio traduz o esforço mais original do empreendimento lisbonense. É, ao mesmo tempo e contraditoriamente, o seu luxo e o seu símbolo: representa, num esquema mental abstractizável, o poder material e o espírito de economia da nova cidade": França, *Ibidem*, p. 128.

19. See Castelo Branco, Camilo, "O Paço Real da Ribeira", *Noites de insomnia offerecidas a quem não pode dormir* (1929), pp. 114-115. Herrera's plan for the new palace presented to king Phillip II considered the building of another block to the other side of the square in order to give to it an architectural uniformity.

20. See section **4.2 *The plans: design and accomplishment.* 4.2.1 *Lisbon***, p. 170. Although, its name indicates the Italian Terzi as the architect, some authors attribute the tower to the Spanish Juan de Herrera, who designed the *lonja* in Seville. See Correia, Horta, "A Arquitectura - maneirismo e *estilo chão*", *História da Arte em Portugal - o Maneirismo*, (1986), p.118.

21. "sobre o q me parece dizer q nas obras do Terreiro do Paço as columnatas serão de bom uzo, e bom adorno, mas que nas ruas de logeas me parece mais conveniente que não haja columnatas .." *Dissertações*, Part III, 14ª, França, *Ibidem*, p. 325.

22. França refers to a first Eugénio dos Santos's design presented by Manuel da Maia in 1756 showing a three-storey building, which is lost. However, Manuel da Maia leaves open the possibility of eliminating one of the two main floors in order to equal the height of the remaining new city: *Ibidem*, p. 124.

23. Harris, John, "The Influence of the English Palladian Architecture in Portugal in the 18th century", *Portugal e o Reino Unido: A Aliança Revisitada* (1994), pp. 73-76. Sequeira, Matos (ed.), *Exposição comemorativa do Terramoto de 1755* (1934) already had expressed the same point of view.

24. Harris, John, *op. cit.*, p. 73.

25. Harris, John, *Idem*. The author mentions the fact that the lower arcade elevations of the *Praça do Comércio* had not been yet used in France: "The elevational formula is Palladian, with primacy given to the first floor, with a half storey above, and an open arcaded ground floor below", p. 73.

26. Harris, John, *Ibidem*, p. 74.

27. Mowl, Timothy and Earnshaw, Brian, *Architecture Without Kings: The Rise of Puritan Classicism under Cromwell.* See also Mckellar, Elizabeth, *The Birth of Modern London* (1999).

28. The medieval division of the downtown according to the location of the different crafts was renewed by Pombal. Obviously, the Prime Minister's aim was to emphasise the commercial character of the area.

29. There is another project for *Praça do Comércio*, probably designed by Carlos Mardel, which shows a different triumphal arch and a diverse treatment of the balustrades and of the towers' domes. The inclusion of trophy elements on the balustrades, the domes and the triumphal arch give to the ensemble a different architectural dimension: baroque and rococo elements stress the representative character of the square and impair its articulation with the whole downtown project. See **Illustration 64**, p. 171.

30. See the façade designs for the new streets opened on the location of *Hôtel de Choiseul* in Paris. Architecte: Lenoir le Roman, 1779. Published in Harouel, Jean-Louis, *L' Embellissement des Villes* (1993), p. 169. See **Illustration 65**, p. 173.

31. Belidor, *Science des Ingénieurs* (1728), livro v, p.79 – quoted in Coelho, Teresa de Campos, *Idem*, p. 108.

32. França, *Lisboa: urbanismo e arquitectura* (1980), p. 49.

33.This company was named *Companhia Reedificadora* ("Rebuilding Company") and seems to be the only of this kind active in this period – See França, *Lisboa Pombalina e o Iluminismo* (1983), p. 146.

34. See Rossa, Walter, *op. cit.* (1998), who develops an important analysis of this project.

35. See Twiss, Richard, *op. cit.* Quoted in França, *Idem* (1983), p. 140.

36. França, *Ibidem* (1983), p. 140.

37. "... the *Viradeira* [designation of the new political conjuncture, which means a *turn* in the overall policy of the Crown] did not exist with regard to the architectural projects and the concept of the city: neither by the return of the baroque taste, nor by a neoclassical

affirmation" (" ... a *Viradeira* não existiu na area da projectação arquitectónica e no entendimento da cidade: nem pelo retorno do barroquismo nem pela afirmação do neoclassicismo") – Silva, Raquel Henriques, *Idem* (1997), p. 173. This work studies in detail the development of the architectural and town planning proposals in Lisbon from the late eighteenth century to the emergence of Romanticism. According to the author, the final years of the eighteenth century, before the French invasions, were of some significance. There was an eclectic evolution of taste, which gave a new architectural dynamic to the city and the State carried out some significant urban improvements: the policing of the streets; a public illumination system and the enforcement of certain sanitary measures. With regard to the history of the Praça do Comércio's triumphal arch see França, José Augusto, *Ibidem.*

38. "Tambem se me faz preciso advertir q se devem aclarar os limites da fortificação de Lix.ª p.ª q os novos fabricadores de edifícios não vão occupando terreno prohibido ..." ("Also, I judge necessary to advise that we should specify the limits of Lisbon's defensive line in order that the new builders will not tend to occupy forbidden ground"), *Dissertações*, Part II, 10. Published in França, *Ibidem*, p. 319.

## 4.2.2 Edinburgh

1. See section **4.1 *Background and proposals.***

2. ECA. Bundle 125, shelf 9, Bay D.

3. *North Bridge Committee Minutes*, 26 August 1766 - **ECA**.

4. See Cruft, Kitty and Lewis, Anthony, "James Craig –A biographical sketch", *James Craig (1744-1795)* (1995), pp. 1-11; Fraser, Andrew, "A Reassessment of Craig's New Town Plans, 1766-1774), *James Craig (1744-1795)* (1995), pp. 25-47; Harris, Stuart, "New Light on the First New Town", BOEC, new series, vol. 2 (1992), pp. 1-13; Hume, John R., "James Craig's New Town", *Rassegna*, XVII, 64-1995/IV, pp.18-26; Lowrey, John and Anthony Lewis, "James Craig: Architect of the First New Town of Edinburgh" *The Journal of the Architectural Heritage Society of Scotland*, Edinburgh, n. 5 (1995), pp. 39-49 and "Robert Adam and Edinburgh" *Rassegna*, XVII, n. 64/IV (1995), pp. 27-34; McKean, Charles, "The Winged Citadel" *Rassegna*, XVII, n. 64/IV (1995), pp. 12-18 and "The incivility of Edinburgh's New Town" *The Neoclassical Town. Scottish Contributions to Urban Design since 1750* (1996), pp. 35-45; Meade, M. K., "Plans of the New Town of Edinburgh" *Architectural History"*, 14 (1971), pp. 40-52; Mears, F. C. and Russel, John, "The New Town of Edinburgh" *BOEC*, 22 (1938), pp. 167-200 and 23 (1941), pp. 1-37; Simpson, David, "City Plans and the New Town" *The University of Edinburgh Journal* (1967/8), pp. 52-57; Tavernor, Robert, "Edinburgh in Context" *Rassegna*, XVII, n. 64/IV (1995), pp. 6-12 and Youngson, A.J., *The Making of Classical Edinburgh* (1993).

5. "29th July 1767 - Act assent setting the Plan of the New Buildings and for Feuing of the grounds on the North of the City", *Town Council Minutes*, 2nd series, vol. 83, p. 118-119 – **ECA**.

6. *BOEC*, vol. XXIII, p. 8. See Simpson, D.C., *op. cit.* (1967/8).

7. Harris, Stuart, *op. cit.* (1992).

8. National Monuments Record of Scotland, *City of Edinburgh Collection,* DC 7740. See Fraser, Andrew, *op. cit.* (1995).

9. Harris, Stuart, *Idem.* With regard to the attribution to James Craig of the first sketch shown on Laurie's plan, see also Meade, M.K, *op. cit.* (1971) and Simpson, D.C., *Idem.*

10. Mckean, Charles, "The incivility of Edinburgh's New Town", *The Neoclassical Town. Scottish Contributions to Urban Design since 1750* (1996), p.41.

11. Gwynn, *London and Westminster Improved, Illustrated by Plans, to which is prefixed a Discourse on Public Magnificence, with Observations on the state of Arts and Artists in this kingdom* (1766). See Lowrey, John, "James Craig: Architect of the First New Town of Edinburgh", *Architectural Heritage*, V (1995) and "Landscape Design and Edinburgh New Town" *The Neoclassical Town. Scottish Contributions to Urban Design since 1750* (1996).

12. Lowrey, John, *op. cit.* (1996), p. 66.

13. Laugier, *Essai sur l'Architecture* (1753), p. 129. Quoted in Lowrey, John, *Idem.*

14. See Fraser, Andrew, *Idem* (1995).

15. "The most striking thing about the circus plan, however, is that the street layout around the central circus is asymmetrical. It becomes apparent that this is not a plan that was intended to be built as it stands, but a way of demonstrating two different schemes for fitting a circus into the centre of the grid, a single drawing showing alternative possibilities": Fraser, Andrew, *Ibidem*, p. 33.

16. "The ville the Stanislas was the creation of that great contradictory society, a closed decadent aristocracy in partnership with the men of the Age of Reason" – Adams, Ian H., *The Making of Urban Scotland* (1978), p. 76.

17. "Finally, McWilliam's rather non-judgemental analysis of Craig's plan makes the important point that it is the informality of Bath rather than the formality of Edinburgh that is striking and unusual for its time": Lowrey, John, *Ibidem*, p. 68.

18. Meade, M.K., *Idem*, p. 41.

19. Youngson, *op. cit.*

20. Meade, M.K., *Ibidem*, p. 40.

21. *The Scots Magazine*, vol. XXV, July 1763. "The design for the bridge is signed 'James Craig Delin.', (and not 'invent.') and so presumably he was being employed as a draughtsman rather than as a planner": Simpson, *Ibidem*, p. 54.

22. Walker, Frank Arneill, "The Emergence of the Grid: Later 18$^{th}$- Century Urban Form in Glasgow" *The Neo-Classical Town. Scottish Contributions to Urban Design since 1750* (1996), p. 59.

23. Walker, Frank Arnell, *op. cit.*, p. 62.

24. Quoted by Gotch, Christopher, "The Missing Years of Robert Mylne" *The Architectural Review* (1951), p.180.

25. Lowrey, John, "James Craig: Architect of the First New Town of Edinburgh" *The Architectural Heritage* (1995).

26. Meade, *Ibidem*, p. 41.

### 4.2.3 London

1. See Ackroyd, Peter, *The Great Fire of London* (1984); Bell, Walter George, *The Great Fire of London* (1994); Hearsey, *London and the Great Fire* (1965); Inwood, Stephen, *A History of London* (1998); McKellar, Elizabeth, *The Birth of Modern London* (1999); Milne, Gustav, *The Great Fire of London* (1986); Porter, Roy, *London a Social History* (1994); Porter, Stephen, *The Great Fire of London* (1996); Rasmussen, *London the Unique City* (1982); Reddaway, *The Rebuilding of London after the Great Fire* (1940 and 1951); Sheppard, Francis, *London a History* (1998) and Summerson, George, *Georgian London* (1978, 3$^{rd}$ edition).

2. Evelyn, John, *Fumigium or the inconvenience of the aer and Smoak of London dissipated* (1661).

3. Ralph, *A Critical Review* (1734), p.3.

4. Extract of the "Commissioners' Report". Published in Reddaway, T.F., *op. cit.* (1951), p. 60.

5. Porter, Stephen, *op. cit.* (1996), p.96.

6. Porter, S., *Idem*, p. 100.

7. Bell, W.G., *op. cit.* (1994), p. 238.

8. Knight's plan had dramatic consequences for him: his proposed financial program caused the king to order his imprisonment. The former would secure substantial revenue for the Crown and the king did not want to seem to take advantage of the catastrophe.

9. "The only new buildings being in brick on sites where others previously existed. Some premises in stone and brick, mainly belonging to the Companies were erected, but in the city the great mass of buildings must have remained as originally constructed in the early days of the Tudor": Knowles, C.C. *The History of Building Regulation in London 1189-1972* (1972), p. 26.

10. Porter, S., *Idem* (1996), p. 97 - refers to the examples of Milan in 1162 and Stockholm in 1625.

11. Summerson, *op. cit.*, p. 58.

12. Elizabeth Mckellar, *op. cit.* (1999), p. 193.

13. McKellar, *Idem*, p. 205.

14. Summerson, *Idem,* pp. 42-43.

15. Mckellar, *Ibidem*, p. 109.

16. Summerson, *Ibidem*, p. 65.

17. Mckellar, *Ibidem*, p. 220.

18. Mckellar, *Ibidem.*

19. The Building Act of 1774 established several classes for the buildings according to their function and significance: in each class there were some specified building rules. However, it was not given more flexibility to the determinations regarding the height of the buildings and the use of some façade encroachments.

20. Porter, Roy, *op. cit.* (1994), p. 114.

21. Noorthouck, *A New History and Description of London, Westminster, and Southwark* (1773).

22. Sophie von La Roche quoted by Porter, Roy, *Idem*, p. 144.

## Conclusion

The Renaissance period gave structure to a conceptual approach to the city, which opened a new era for town planning. Space was arranged according to geometric patterns and the classical architectural legacy was reinvented in order to establish standardised formulas. Geometry and mathematics became fundamental tools of the new city design.

This trend had developed since the late medieval period. In fact, from the thirteenth century, we can trace schemes of more regular urban patterns and territorial measurement. This process occurred as a result of a stream of factors, which led to city growth and to a more complex urban system. Cities attracted a multitude of people who found in them the best place for the development of their different trades. The nature of the relationship between the rural and the urban was changing, reflecting the gradual but significant changes taking place in Europe.

Cities became the core of societies: centres of commerce, social interchange, scientific development and cultural and artistic production. The development of long-distance trade, the gradual centralisation of political power, the European expansion to overseas territories and the consequent complexity of military defences all concurred to give expression to a new idea of the city. From the sixteenth century, reason and experience took the lead in the system of ideas and shaped the framework in which the new concept and design of the city would find its expression.

From the incipient and occasional solutions of the late medieval period to the Renaissance model of the "ideal city", there was primarily a process of conceptualisation of the dream urban environment. In fact, the new geometric patterns of the military strongholds already implied a precise concept of the city. Order and utility were the main premises conforming with the structuring of a rational approach to knowledge and to the organisation of societies.

The baroque period developed and put extensively into practice the referred-to-above town planning schemes. They were carried out according to a more defined economic, social and political perspective. From the sixteenth century, two phenomena changed European society irreversibly: the increasing pre-eminence of long-distance trade and the forming of national states. Ports and capital cities became major elements in the urban network. Their impressive growth was the reflection of a fast evolving society. European countries were fighting for economic supremacy and this dispute was fuelled by the development of national markets and the colonial trade. European thought tried simultaneously to structure and to adapt to this

process. Mercantilism and political absolutism were conceived and put into practice as fundamental strategic expedients. The result was not straightforward. Although they aimed for powerful economic and political social structures, they also paved the way for a new order. On one hand, the development of trade nourished the emergence of a new social group: the middle class. On the other hand, the centralisation of the political system searched for the maintenance of the social *status quo* within the new economic context. *Ancien régime* Europe was trying to adapt to the inevitable structural changes brought by economic development. In the Netherlands and in Great Britain, this process saw its most advanced expression. The rest of Europe struggled to slow the pace of the emerging political and social order, which would give form to the modern age. In a time of change, Europe evolved according to different rhythms. Nevertheless, all of the specific political and social situations are expressions of the same historical process.

Throughout the seventeenth century, the different architectural options expressed these apparent contradictions. The sobriety of the classical proposals or the voluptuous baroque designs were constructed upon the same conceptual basis, although presenting different interpretations. The town planning premises were similar: architectural excellence and regular spatial layout. Rome and Paris developed schemes of spatial rearrangement through the use of architectural units. Architecture was the dynamic element in the new urban design. However the tendency was for a global control of the urban development. The building legislation and the nature of some major urban works reflected this reality. Apart from the unquestionable symbolic character of architecture, there was also an emerging concern with more wide-ranging issues: the social dimension of town planning was gaining an increasing relevance. The Renaissance *ideal city* was the basis for a town planning exercise, which envisaged practicable solutions. Utopia was gradually turning into a feasible vision of the city.

The eighteenth century reinforced inherent *ancien régime* contradictions: the extensive commercial network and the political structure were favouring social mobility. The new social group combined enterprising merchants with the cultured and influential people who served in the complex administrative and judicial system. The flexibility of the social structure was increasing as the aristocracy sought financial survival and the middle class searched for social prestige. As already mentioned, European philosophical and scientific thought evolved in connection with economic and social development. Man looked to society as a structure able to undergo progress and improvement: it was possible to create on Earth a better place for Humankind. Ultimately, Enlightenment thought expressed itself as a search for the *happiness of the people*. Parliamentary Great Britain became the model: it was the most illustrative example of a representative political system, economic success and equity before the law. These new ideas led not only to revolutionary theories but also influenced the prevailing political system: the absolutist monarch became an enlightened despot. As such, he should use his autocratic power to advance the economic and social conditions of his

people. This improved society was also a cultured one. Knowledge and artistic expression were important components of the former.

More than ever, the city represented the stage of the new society, in other words, the scenario where the improvements should take place. The eighteenth century theoretical approach to architecture and town planning benefited from a long creative period. In fact, throughout the two previous centuries, capital cities, residential cities and the colonial world had served as a fundamental field of experiment. The number and dimension of these urban projects had generated a consistent and important literature. From the architectural handbooks aiming to divulge information in an easy and swift manner to the more comprehensive town planning treatises, we can trace an evolution of the conceptual premises and the practical solutions. The objective was to give quality and efficiency to the urban environment: *embellishment* and *public utility* were the town planning mottos. These concepts were in development from, at least, the sixteenth century. However, the eighteenth century embraced them as the paradigm of the new town planning program. The emerging idea of the city envisaged a coherent urban unit able to supply to its more citizens a favourable environment. The city was conceived and designed in order to assist both the private interests and the common wealth: it should serve commerce and stimulate art and culture. The relationship between architecture and urban space was strengthened. The former was adapted to the latter as a vital element of its structuring. The representative character of architecture was still present: Patte's proposals for Paris are paradigmatic of this assertion. However, this feature was not seen as a statement in itself. In fact, architecture should conform to a global vision of the city, which should assist, promote and portray the excellence of the new improved and enlightened society. Classical architecture was, once more, a fundamental tool of the town planning program. Nevertheless, Neo-Classicism was developed as a functional and flexible architectural formula able to be connected to several spatial designs. Also, it furthered more daring proposals, which already linked the architectural and engineering expertise. The late eighteenth century, gave to this town planning program a decisive impetus: it created administrative and professional structures able to direct and carry out some of the most urgent urban improvements.

The Enlightenment city was an ideological statement, which only made sense by its practical execution. It was a conceptual model, which determined a precise and operative town planning program. The main premises of modern town planning had been established.

Pombaline Lisbon, the New Town of Edinburgh and London's West End are three specific but comparable town planning situations. They were structured by different architectural and town planning experiences and were conceived in diverse social contexts. However, it is possible to establish important links between these three examples. In the sixteenth and seventeenth centuries, as large and important European cities, Lisbon, Edinburgh and London

underwent a comparable process of urban growth and urban planning. They were all confronted with uncontrolled building, sanitary problems, traffic congestion and criminality. With regard to these issues, we can consider that the royal and city administration town planning strategies were based on similar premises: architectural quality and public convenience. Their practical implementation contributed decisively for the conceiving of a given idea of the urban environment, which was also expressed in the Renaissance theoretical approach to town planning. From this period, the three mentioned capital cities shared a structured and coherent conceptual framework. These assertions can be judged as unoriginal and vague. However, they set up a precise and unavoidable context, which enables us to better understand the dimension and significance of the particular features of each of these town planning projects. Obviously, these differences are connected to each of the social and cultural contexts present; these generated and strengthened conceptual choices and, fundamentally, practical procedures.

In Pombaline Lisbon's case, we were able to observe the importance of the political and military circumstances in the structuring of an architectural and town planning trend. Military engineering directed and developed the latter. At the eve of November 1, 1755, the building experts possessed simultaneously the knowledge and the skills to set up a major town planning venture. The practical aspect of the military engineering procedures, which in the Portuguese situation acquired a manifest relevance, represented a major element in the process. The vastness of their experiences and their pragmatic approach to town planning issues conformed to the emergent idea of the city: it envisaged a consistent and functional urban structure. Architecture was a fundamental element of the latter but it should be submitted to it. Therefore, it helped to set up a standardized building system. If military issues were the principal pretext for the conceiving of the Renaissance "ideal city", the evolution of military engineering with regard to town planning issues was also more than a circumstantial phenomenon. It had a fundamental bearing on the structuring of the enlightened idea of the city. At the beginning of the eighteenth century, the Portuguese military engineers already envisaged the setting up of a modern city. In other words, they viewed the city as a structure able to serve and promote progress. Pombal, who had witnessed the British pragmatic architectural and town planning's procedures, understood that reality and used it accordingly.

The New Town of Edinburgh was born from the following two concomitant premises: the need to give a suitable residential area to the middle class and the desire to improve the city's image. The *Proposals for Carrying on Certain Works in the City of Edinburgh*, published in 1752, is a marking point in the development of the process that led to this enterprise as it sets up a well-defined conceptual framework for the extension of the city. The *Proposals* voices the aspirations of an elite, not alien to the Scottish Enlightenment, to an architectural and urban renewal of Edinburgh. The main ideas expressed in this text are paradigmatic of Enlightenment town planning programs:

regularity, spaciousness and architectural excellence in order to assist the development of a cultured and enterprising society. London, with its new West Squares, is pictured as the example to be followed. The winning plan for the building of the New Town was the work of an architect, whose inexperience is well-documented. However, the plan suffered several amendments, whose authorship is still a controversial matter. The final plan reveals a precise town planning program: sobriety and utility are the main structuring precepts. The links between the Pombaline and the New Town projects can be traced not only in the design itself but also in their fundamental premises. Their contemporaneousness might represent an important element of analysis. However, the insufficient evidence directly relating the two ventures impairs this type of approach. We believe that the answer can be found in the town planning conceptual framework of the period. A defined but flexible formula was used as a means to achieve the so-desired functional and global urban unit. The variation in the geometric patterns and their relationship with the architectural solutions resulted from different and specific demands and circumstances: architectural representation, urban convenience and financial resources. Pombaline Lisbon and Edinburgh New Town searched for a low cost and efficient urban ensemble, which could also enhance their image in an international context. The pragmatism of the military engineers in Lisbon and the pragmatism of a town council project in Edinburgh found a similar town planning expression. Ultimately, both cities were designed to serve the progress of a commercial society or/and of a commercial project.

London was unquestionably a model: firstly, given its important rebuilding effort after the Great Fire in 1666; secondly, as a result of its spacious and agreeable new West End squares. After 1666, the urbanisation of this capital city combined traditional and avant-garde elements, giving to it a particular imprint. The relevance of the master builder and the speculative builder in the process are paradigmatic of the assertion referred to above. Also, the role of the landowning aristocracy, which was only possible by the setting up of the property leasing system, cannot be disregarded. London's expansion was a major financial enterprise, which used established schemes of building procedures. The Neo-Palladian proposals used in the public and noble buildings and the standardized sober units of the new residential squares are both components of the new London. However, they did not result from a highly structured project of the city. Covent Garden, St. James's Square and Bloomsbury Square are examples of town planning projects, which combined elements of financial profit and social improvement. The role of the speculative builder in the development of a great number of the London's squares stressed the former aspect without invalidating the latter. A balanced compromise between the building legislation and the private enterprise regulated the urbanisation of the new London. The aim was to improve London's urban conditions but the drive was its financial benefit. London's detractors were aware of the lack of a global planning and the need to articulate the extending urban areas. However, London's main town planning procedures suggested already another urban context: the industrial city. Within the context of the enlightened city, London's example was relevant as

it was able to structure a suitable environment for the progress of a commercial society. The architectural sober and standardized options were also consonant with the utilitarian character of the new idea of the city. It is interesting to note that the different formative backgrounds of London's master builders and Lisbon's military engineers did not prevent a similar *modus operandi*. The difference between London's example and the other two resides, precisely, in the capitalist character of the building process. As such, in London the precise and deliberate ideological content of the enlightened city was not so apparent. In the second half of the eighteenth century, London had gone beyond that stage: the city was already a product of the new commercial and improved society.

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# A PLACE FOR LISBON IN EIGHTEENTH CENTURY EUROPE: Lisbon, London and Edinburgh, a town-planning comparative study

(vol. 3)

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30th June 2004

Declaration

This thesis has been conceived and composed by the candidate.

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# APPENDIX

# 1. Manuel da Maia – *Dissertação*

This translation intends a balance between this eighteenth century Portuguese document, with its particular syntax, and a fluent English text. Therefore, it attempts to stay true to the original document, although the sentence structure is sometimes rearranged in order to make more accessible the ideas conveyed by the author.

The words or sentences in brackets are part of the original text. In straight brackets are included the translator's additions, which can be either syntax editing or useful information.

## *DISSERTATION*

### 1st Part

1. Acknowledged, and noted the destruction of the city of Lisbon it is necessary to undertake its renovation, and as the latter can be carried out by diverse methods, it also seems that we need to consider these in order to elect the one with more advantages and less inconvenient. The methods, which occurred to me, are the following:

2. The first is to restore it to its previous layout, erecting the building according to their previous height and the streets according to their previous width. This first method presupposes that the past earthquake is not a sign of another; and that, as we have not experienced a similar earthquake for many years, we will not expect in the years to come the occurrence of another one. For this reason we will promptly restore Lisbon as it was before with new and improved buildings, able to receive and shelter the same number of people and [making sure that] their proprietors receive their previous income. Lisbon will benefit from some improvement compared to its previous condition. As the dumping of the debris is a very difficult and hazardous task, either at the sea or in land, the debris and ruins will be used for the erection of the new buildings in order to avoid the effort and expense of the clearance;

3. The 2nd method is to erect the buildings according to their previous height and to widen the narrow roads. This 2$^{nd}$ method also neglects any seismic precaution and considers firstly the public convenience of the large roads. It keeps enough space for the tenants and most of the proprietors' previous income through the maintenance of the past height of the buildings. Lisbon will be more agreeable than it was before, with good accesses, which can be built on the *Terreiro do Paço* [Palace Courtyard], avoiding the undercover passages, and improving some of the most significant ruined buildings. Therefore, Lisbon will be rebuilt with obvious benefits and, which is worth of mention, it will be also maintained the interests of the ruined proprieties' landlords.

4. The 3rd method is to reduce the height of the buildings to two storeys above the ground floor and to enlarge the narrow roads.

5. This 3rd method prevents similar occurrences by reducing the height of the buildings since is to expect more ruin and damage from the highest ones; also it is easier to getaway from the debris in large roads, as the narrow ones do not facilitate the escape.

6. The 4th method is to demolish the whole downtown, erecting it with the debris, which will smooth the steep roads to the highest areas, and opening the streets which go down to the river with a better drainage of the city waters and forming new streets with enough space, [which can be achieved] not only by their width but also by the height of the buildings which can never exceed the width of the roads. This 4th method not only considers, as it does the 3rd, the prevention of a similar calamity, by the observance of the height of the buildings and the width of the roads, but also easies the difficult deposit of the debris, using them to smooth the incommodious connections between the downtown and the high town and better expelling the city waters to the sea, protecting Lisbon's downtown from the floods which occur at the high tide.

7. The 5th method is to ignore the ruined Lisbon and to form a new one from *Alcântara* to *Pedrouços*; allowing, however, the owners of Lisbon's ruined properties to erect them as they please. This 5th method is the easiest: as firstly it does not have to deal with the difficulties of clearing and dumping the debris; it offers an amenable green field site, free from the restrictions of the old Lisbon, without having to verify the condition of the houses to be preserved or to be demolished and attend to the complaints of the owners of the latter and, most of all, avoids the great expense which any of the above mentioned situations will demand. Lisbon will be erected with better taste taking into account the advantages generally ascribed to the fields and beaches of *Belém* and its environs, protecting the inhabitants from the horror experienced with the destruction of the ruined city. The new Lisbon will be formed with incomparable swiftness and with a suitable layout of streets and buildings, without having to deal with the complaints of the proprietors of the ruined Lisbon's buildings, as their interests will not be in any way harmed, nor they will be prevented from rebuilding their properties to use as they please. Moreover, even if we use the other referred to above methods, 2nd, 3rd and 4th, which plan the enlargement of the streets, it will be also necessary to extend Lisbon to the fields of *Belém*, or to even a greater distance, to receive all of the population which will be homeless by the reduction of the number of houses, as the four and five storey buildings will be reduced to two storeys and a place where once ran four or five streets will now have two or three at the most. [Also, I think that] after overcoming a series of difficulties with great effort, expense and time, *Belém* will certainly be seek out as a refuge. Therefore, it will be better to choose this place to begin with for the convenience and satisfaction of the public and less expense. Also the submersion of the *Alfândega do Tabaco* [Tobacco Custom House] quay seems to advice not to get near a place that seems to be predisposed to great adversities which can keep affecting it and all in its environs. Also, this opinion seems to be supported by the fact that in Portugal we can find some cities

and towns that, without any specific explanation, have kept the name of the ancient ones, whose ruins we can still notice nearby. Considering the situation, it seems that the latter example indicates the most suitable solution. We should, therefore, opt for the formation of a new city and of a new settlement on a more favourable location for the renovation of a city destroyed by such an incident. Also it might weigh up in this selection the recognition, that the effects of an earthquake are more violent and effective in the most heavily populated areas as the remains of the deceased penetrate and impregnate the soil concurring for the formation of another earthquake or attracting more effectively its effects. Taking into account this probability, it seems advisable to avoid as much as possible the maintenance of such an attraction. I think I have read that Lisbon has suffered from the effects of earthquakes for a whole year. As the fire has consumed all of the documentation, which could assist me in this subject, I can establish neither the period nor the accuracy of the principle mentioned above or consider some of other related effects. However, it can be used as an example that the interchange of the human remains can cause such damage. The multiplicity of earthquakes, which the very populated city of Constantinople has been suffering, seems to conform to this assumption: *quae sola non profunt, multa coletta juvant*.

8. So far, this is what occurred to me in favour of each of the five possible methods for the renovation of Lisbon. It remains to declare what can be said against it in order to see if, following these considerations, I am able to make a decision without being accused of not taking into account all aspects of the problem.

9. I notice in the 1st method the neglecting of the improvement of the city, which is rebuilt with the maintenance of the narrow streets, making them a nuisance, and with tall houses which does not attend to the recent fear of high buildings. However, it can be said that this fear will be short lived for as soon as any noble person will construct a building with more than two storeys, others will immediately follow the example and, as a result, all who will need to do it. The moment the horror caused by the earthquake will be forgotten the law of the two storeys will be dismissed. We have as an example the alignment law, stipulating that the houses should be refurbished and stepped back in order to keep the same width of the streets, as it was the case of the *rua direita das portas de Santa Catarina* [*St Catarina* Gates Main Street] where it was implemented for a certain period but not followed in some of the houses that were later refurbished or newly built.

10. Although considering the embellishment of the city with regard to the width of the streets, the second method has the flaw of not taking into account the effects of the earthquakes on tall buildings. [Also], although it favours the owners of the remaining buildings, as it allows them to keep the same number of tenants and, consequently, the same income and although it might be suggested that the two storey law will have the same fate as the alignment law, I do not think that these are satisfactory reasons as only the future will tell.

11. The 3rd method, which seems the most acceptable as it considers the embellishment of the city through the spaciousness of the streets and it prevents the damaging effects of the earthquakes by only allowing two storey buildings, has against it the complaints of the owners of the extinct buildings and of all who will see their incomes reduced by the diminution of the number of tenants. Amongst these, the aristocracy, clergymen and religious orders will have their complaints specially considered, as they are usually attended. [This method] also has against it the dumping of the debris, as the ruins of the collapsing houses will be added to the debris that are already filling the narrow and large streets and, most of all, the serious expense which it will take to compensate for the reduction in the ruined buildings' area, partially or as a whole.

12. The 4th method, although being a better solution for the dumping of the debris and rendering the city more spacious, has the great burden of giving to each one a fair recompense for their losses.

13. The 5th method, which seems the simplest, will have against it the benefit of the owners of the main streets' buildings, as they will fear the reduction of their income, increasing, as a result, the number of allotments in other city areas.

14. After these considerations, it remains to select without regret one of these five methods, which I find to be very difficult. In order to solve this problem, it has occurred to me that only Your Majesty's selection of the Royal Palace's location will help to make the most suitable decision. If Your Majesty wishes your new and royal Palace to be built in *Belém*, the method n. 5 will be infallibly adopted and preferred to all of the others. However, if Your Majesty wishes to take possession of a healthy location, superiorly suitable to be head of the Court, with 4 good accesses to the city and the countryside, taking advantage, firstly, of the benefit of *Belas*' aqueduct and of a firm and solid ground with a good levelling and capacity to receive magnificent buildings, Your Majesty has the area of *S.João dos Bemcasados* and the *N.Sr.ª da Estrela* convent with its 4 convenient accesses: the first to the inland countryside through *Campolide* and *Sete rios*; the 2nd through *Rato*, *Noviciado da Cotovia*, etc.; the 3rd through *rua nova de* S.Bento [S. Bento New Street] or new colony; the 4th through the way of *Sr. da boa Morte*, *Fonte Santa*, *N.Sr.ª das Necessidades*, etc. to the sea. All fine-levelled roads, with a good drainage of waters for the cleaning of the buildings and roads. These waters come from the fountains and ponds of the Royal Palace and from a hospital situated in the inflection of *S. Bento*'s fence to the eastern side. I had selected this area when it was considered the *Hospital real de todos os Santos*' location [All Saints Royal Hospital], as I judge it preferable at present to the area near *S. Domingos* [convent] in *Rossio*. Also, I ought to remind that a public library could be built in the mentioned new and royal Palace, to remedy the lack of one in the Court of Portugal, and nearby the Real Archive. Even if it had survived the earthquake, the latter was in need of such accommodation, following the example of the Roman Archive, which as access through the Vatican Library. For the duplicate, which is also urgently needed, it should be chosen another location.

15. And elected and appointed this place of *S.João dos Bemcasados* and *N.Sr.ª da Estrela* convent as the site of the new royal palace, it seems to me that we should begin the renovation of the city of Lisbon by the public buildings, which are erected by the royal treasury, as the main source of the royal income is the maritime activities and trades. For which purpose Your Majesty will bequeath the old palace, as the kings your ancestors bequeathed their palaces, which are used today for others functions. The Exchange House could also be established and everything according not only to the principles and formalities of what occurs in other Courts, but also to the improvements that may take place in our country and good reasoning may achieve.

16. The accesses from the main square of the *Terreiro do Paço* to the city centre should be opened according to the two *Ourives do Ouro* [Goldsmiths] and *Ourives da Prata* [Silver Goldsmiths] streets, avoiding all the undercover passages, which are dangerous during the night.

17. The houses on the streets to be opened between the royal palace and the old city shall be built after the royal works. However, whether they are built in wood or in stone, their height shall never exceed the width of the streets and even if the streets are larger than the height of two storeys above the shops, it shall not be allowed the building of another floor.

18. And as far as the renovation of the ruined city is concerned, I prefer the already mentioned 4$^{th}$ method, using the debris to give more height to the downtown ground and starting to heightened it from the courtyard of the *Anunciada* convent, the courtyard of the *N.Sr.a da Boa Hora* convent, the courtyard of the *Ermida de N.Sr.a da Assumpção* [N.Sra. da Assumpção Chapel] on the *rua dos Ourives da Prata* [Silver Goldsmiths Street] and following this example, to heighten all the streets which are at the same level, giving shape to a descent towards the sea to end at the gate of the *Alfândega do tabaco* .

19. – In order to open the streets in a more regular manner, all of the ruined streets will be perfectly signed with little fixed flags, as this is the best method to confirm the ground occupied by the houses and streets and to amend what is necessary with certitude. Thus, we will avoid the risk of only using maps, as it happened before, and with this practical and reliable information we will be able to decide how to compensate for the reduction in the properties' areas, which requires a special consideration.

20. – However, it seems that we need to decide the building of arcades on this dowtown's main streets and flat neighbourhood, as we had on the *rua nova dos Ferros* [*Ferros* New Street] and *rua da Confeitaria* [*Confeitaria* Street] for the convenience of the people during the winter and wet weather. Nevertheless, the buildings should be of no more than two storeys, one inside the arcades and the other above these.

21. – I declare that the postponement, to the last moment, of this task is in order to allow the uncovering of the great number of corpses covered by the

debris without causing any corruption of the air. For the same reason, I [will] also try to raise the foundations of the new buildings so we will not have the same need to excavate. With these efforts, I will try to stop the generalized fear of all the buildings not only those built of wood. Furthermore, I do not think there is another way of building as the fire has consumed most of the resources of Lisbon's citizens.

22.- In this first part of the present Dissertation, I tried to express in general what it was possible to decide given the difficulty of the situation. I will willingly submit myself to any conscientious corrections which will better solve it or criticize whatever they esteem to deserve it, as I would equally appreciate the acceptance of my proposal or the fair criticism before the execution prevents it. However, I will have to say that I will not engage in a second and specific part, if in the first I have drifted away from what is more convenient to the Royal service and welfare of the public, as it is easier to be wrong in the particular when the general is incorrect.

4 December 1755. Lisbon. M.el da Maia

Second Part

1. As it seems that the first part of my Dissertation, with regard to the renovation of the City of Lisbon, is having some acceptance, I need to persuade myself to specify the second, as I promised in the last chapter of the first one, although I have consider it to be more difficult. I will, however, use the same method that I have used in the first one, questioning thoroughly all the issues that I intend to select. I will show, therefore, that I have considered them up to where my possibilities could reach, even if I was not able to contemplate them in all of their aspects. The way will be, thus, paved, for those who are better equipped to distinctively differentiate the advantages and the flaws that I will not be able to understand.

2. I proceed in the assumption that Your Majesty will elect the place between *S.João dos Bemcasados* and *N.Sr$^{a}$ da Estrella* convent for your new and Royal Palace, becoming this place the head and principal area of the city of Lisbon. To this, it will precisely follow the rebuilding of the destroyed city for what seems to be more appropriate the 4$^{th}$ method of renovation of the city expressed on the paragraph 6 of the 1$^{st}$ part which says so etc.

3. It seems to me indisputable that there is a need to renew the downtown, and that this demand has been presented before the occurrence of the current necessity. This happened with the *rua nova do Almada* [*Almada* New Street], which was opened when the *Bairro Alto* [High District] had as its best access the *rua dos Fornos* [Ovens Street] or alley, the *rua dos Ourives da Prata* and *rua dos Ourives do Ouro*, which did not allow the passage of more than one coach and, lately, with the preparation for the enlargement of the mentioned *rua nova do Almada* up to the *rua larga das portas de Santa Catarina* [*St. Catarina* Gates Large Street], which should be, according to the alignment law, of fifty four *palmos* [*palmo* – ancient linear measure which

corresponds to an open hand] of width after the works. However, it did not have a procurer ready to carry out its enlargement in every part where its buildings were renovated. Taking into account the referred to examples, it seems indisputable the renovation of the Lisbon downtown. There is left to make the selection of the most appropriate method for the achievement of this much-praised benefit. Therefore, I state that when I presented the 4th method for the renovation of Lisbon, which was the demolition of its downtown, I expected that Your Majesty was able to choose a method to take possession of all the buildings in that city area, after being appraised of their current condition. Hence, after their demolition, in order to allow the opening of new streets and new locations for the new buildings, every landlord creditor could receive in exchange of his property another for the same value, after being divided by them the price or value of the ruined houses, and known what corresponded to each *palmo*, *vara* [old measure corresponding to 1,10 meters] or *braça quadrada* [old measure corresponding to 2,20 square meters]. In case they were not pleased, these properties could be sold to anyone willing to pay for them and these payments given to the creditors. If this is still not straightforward enough, Your Majesty could order the rebuilding at Your Majesty's own expense in order to secure in your patrimony the resulting profit, as this seems to me the easiest and swiftest method which I think was used in Turin and London when similar renovations were there carried out. However, I cannot assure the veracity of these assumptions as the fire has consumed all the instruments I usually use in similar situations. When I saw that a sort of inventory of the buildings in the city of Lisbon was ordered with all their measurements and value, it occurred to me that the mentioned 4th method of renovation had been adopted. However, this sort of register can be used for other method of renovation, taking into account the current disposal of the debris heaps, each being placed where it came from, so the proprietors can use the old materials in order to rebuild at their own expense. This new undertaking of keeping the debris and all the materials on the buildings' previous site, suggests that Your Majesty is not willing to use the 4th method, following my project of demolishing and destroying the downtown in order to rebuild the city with new and better materials and with a new plan, rebuilding with its own debris only what appears to be advantageous.

4. However, as it is not possible to accept that Your Majesty will order the maintenance of the downtown according to its old layout and, on the contrary, will want the buildings' proprietors to reduce them according to a better layout, it seems to me that the best method is to keep the old layout of some streets, e.g. the *rua dos Ourives da Prata* and *rua dos Ourives do Ouro*, the *rua nova dos Ferros* and also the *Escudreiros* and *Odreiros* streets. However, the *Correaria*, *Arcas*, *Cutelaria*, *Espingardeiros*, *M.l Gonçalo*, *Pixileiros*, *Esteiras* and *Mercadores* [Merchants] streets, behind *S. Julião* to the *Conceição* [street] and the *rua nova da Palma* [Palma New Street] ought to be enlarged on one side, staying the other side as it is now. However, the side that is kept in its old layout, taking into account the improvement that is obtained without prejudice of its width, should be used to compensate the width reduction of the opposite side and the expense of the works, for which resolution the Ministers of Your Majesty are responsible. Having dealt with this, there is left

to decide if the renovation of the downtown should be extended through the opening of new streets, e.g. from *rua de S. Nicolau* [S. Nicolau Street] to the *rua nova dos Ferros*, from the *largo da Igreja da Victoria* [Victoria Church Square] to the *Tronco*, and from there to the middle of the *Calcetaria* [street]. Also, other new streets could be opened through the demolishing of a great number of whole buildings and others could be intersected in a more regular manner. I think that all of this will force us to face obstacles difficult to settle and to reimburse, being greater the loss than the benefit of the street improvement. Since the destruction of the alleys and the houses located on a street is only practicable through the demolition of the whole downtown and the use of the above referred to compensation, which is expressed in the paragraph 3, it seems to me that, if this method of renovation is to be followed, it would be more suitable to only enlarge the narrow streets, maintaining however one of their sides. We need also to decide if the proprietors of the streets kept as a whole, e.g. the *rua nova dos Ferros*, the *rua dos Douradores* [Gilders], the *rua dos Escudeiros*, the *rua dos Odreiros*, which are not entirely on a straight line, should be forced to regularize them, which will also cause great hostility and many requests and petitions. Thus, as for the three methods of renewing the downtown, I consider as the best and most appropriate, the first, demolishing it all and renewing it all; the 2d, to keep the large streets and enlarging the narrow streets, as average and the 3rd, adding to the 2nd the changing of the alleys in large streets, as inferior.
It seems to me that in all of the three situations, the opening of an undercover and large passage from the *Terreiro do Paço* to the *rua nova* [*Ferros* New street] is indispensable; if we decide for only one, we could make it to end at the midpoint of the *rua nova* [*Ferros* New Street]; if we decide for two, the second one could be opened just opposite of the *rua dos Ourives do Ouro*. The *rua nova do Almada* should be made smoother at the intersection of the *Calcetaria* [street] with the foot of the *Calçada* [steep road] *de S. Francisco* and the *largo* [square] *da Patriarcal*, not only to make easy the climbing to the *Bairro Alto*, but also to give better drainage to the waters. The *calçada de Pedro Novaes* is also asking to be smoothed.

5. In order to refurbish the downtown according to the mentioned first method of the three presented in this second part, which is the one I prefer, the first step consists in giving compensation to the proprietors with the original obligation. [This should be done] after the evaluation of all the houses to be demolished, each one at the time, with the proprietor name and quality of the obligations, either *morgados* (1), *capelas* (2) or *foros* (3); and also in calculating, on a new downtown plan with the streets freely drawn, the number of superficial palms of the areas to be urbanised, keeping however, as much as possible, the Parochial churches, *Ermidas* [chapels located on an isolated place] and convents and the parishes' old dimensions; and known the total value of all the demolished houses, in dividing this value by the number of superficial palms existing in the mentioned areas. According to this division, it will be known the value to be given to each palm. Therefore the compensation for each demolished building will be done according to the number of palms corresponding to its value. However, [This should be done] with the notice that the quality of the location will be always recompensed: a propriety near the sea will be exchanged with another near the sea; a

propriety near *Rossio* will be exchanged with another near *Rossio*, and accordingly to all the creditors. Also, it will be determined the right date for the creditors to begin erecting their buildings in order to have them completed in according to the deadlines and following the plans given to them by the city council architect, Captain Eugénio dos Santos e Carvalho. Each street will keep the same proportion in doors, windows and height of the buildings. In what concerns the buildings' quotas, it seems to me that they should be of two storeys above the shops. However, the walls dividing the buildings should exceed the height of the façade walls according to what is considered to be enough to prevent the fire from going through one roof to the other, as it happens when this measure is not taken. Is always a well-worth expense to build the mentioned portion of wall as it safeguards each building against such an enemy. I mentioned above that each street should maintain its proportion with regard to doors and windows, as it seemed to me better that each street or each district should have any kind of diversity at least in the colour, rather than having all downtown entirely uniform, even to prevent the other parts of the city, which are kept according to the present shape (layout), to look too dissimilar. I think that is impracticable the entire renovation of Lisbon, in all of its parishes. However, my imagination does not prevent me of thinking that after accomplished the renovation of the downtown, it will be possible to carry out with more confidence what now seems so difficult.

6. This project has no chance of showing the flaws noticeable in the others and has the advantage of not being regretted after its completion, as it presents itself as the most expeditious and more relieved from the difficulties which occur in the other two and it is accompanied by all of the possible improvements. There is left to know how to overcome the problem of the correspondence between the buildings as a result of the need to keep the same proportion between them. [In fact] the number of superficial palms or areas given to a proprietor by the estimated value of his propriety will seldom correspond. In order to overcome this problem, as soon as we have established the buildings with a specified proportion on a plan, we will need to place them for sale. For the purchase of the proprieties, we should always give preference to the creditors under the condition that if the land received by each one is worth more than the one they have left they will hand over the surplus so it can be given to another creditor who has received a land of less value than the abandoned propriety. The compensation should be adjusted according to this procedure: the creditors should hand over in cash the equivalent to the land surplus and, in case they will not want to receive a larger propriety, they should receive in cash the amount needed to complete the value of the abandoned propriety; when there is an excess of proprieties for lack of creditors wanting to by them, those should be sold to other buyers so the creditors can receive in cash what is due to them; and in case there are some creditors who want to buy more land than they are entitled to, which can be prejudicial to other creditors who also want land and not money, this should not be allowed excepting if there is a lack of creditors wanting money rather than land.

7. And to beat the fear of lack of buyers for certain areas and of creditors wanting to receive them in return for those they have left, it occurs to me that

as all businessmen see as very convenient to have their houses near the tribunals on which they rely, should your Majesty begin the renewal of Lisbon, as I have previously referred to in the paragraph 15 of my Part 1, by the public buildings, which are constructed at the expense of the Royal Treasury, almost all at the seashore, and so I am persuaded that with this attraction all those who depend on the referred to tribunals will seek proprieties to build on those places, not objecting to give in just one go a lump sum expecting that in time they will get back a considerable amount as a result of having their houses near the courts, on which they daily rely for their interests. With this attraction, the renovation of the Lisbon downtown will be much facilitated with the advantages presupposed in the mentioned renovation method: to demolish it all. However, while I am hoping that the attractive of the construction of the public tribunals will make effective the proposed project, firstly I recall that the Custom House, which usually occupies a great deal of ground, and many stations, according to the variety of goods cleared there, could be reduced to the minimum following the English example. There, the goods are cleared in the ships and from there are sent to their owners' homes. Specific quays are established for the landing and dispatching of cargo, which avoids the double effort of having to take them first to the Custom House and the danger of fire, flooding and robbery experienced there sometimes. I cannot persuade myself that the English take less care of the royal rights than the Portuguese and as the Custom House is ruined it seems a good idea to change the procedure saving time and money which will be spent in its construction.

8. Up until now I have devoted myself to itemizing the renovation of the downtown and as I assume that Your Majesty will use the place of *S.João dos Bemcasados* and the *N.Sr.ª da Estrella* convent, all of the *Sta Isabel* parish will be included in the city and court of Lisbon where new buildings are constructed without any order or proportion, which was already occurring in the time of king Dom João V. With regard to this problem, I sent a presentation to the mentioned king and Lord requesting that he would command the city council senate to establish the new layout of the streets being opened in the outskirts, setting up the width of not only the main streets but also of the alleys, establishing for the latter al least 25 palms and for the main streets the width of the *rua dos Ourives do Ouro* and *rua dos Ourives da Prata* and establishing also larger areas for squares and markets. The mentioned king and Lord decided, thus, to order by a royal decree these measures which was registered in the State Bureau and it must be also registered in the notary of the mentioned senate. I cannot name either the day or the year, as I do not have presently any accessible records. At the present, when the buildings are spreading everywhere without any kind of regulation it seems to me even more urgent that an adequate and clear regulation and the senate through its architect and master builders should begin to mark the lengths and the widths of the streets which are being added to the old city. As on the mentioned marking depends the good ordering required for the new streets, they should be designing, at the same time, the plan of the new streets, which should be used to clarify any doubts that might arise after the removal of the marks. I advise that it is more convenient to do first the marking on the ground and afterwards the plan with its legend, rather than to do an ideal plan first.

9. As it is convenient that the buildings should keep a proportion in their height and in the design of windows and doors, after being established the streets and the squares, it would also be appropriate that the mentioned Senate Architect should present a plan not only for the renovation of the ruined downtown but also for the new area to be urbanised.

10. Also, I judge necessary to advise that we should specify the limits of Lisbon's defensive line in order that the new builders will not tend to occupy forbidden ground. The *sargento mor* [chief sergeant] Filippe Rodrigues de Oliveira, accompanied by the *Vedor Geral das Fortificações* [Fortifications General Supervisor] and his amanuensis should be responsible for this task as the former has already examined it, when he was inquiring about the funds for the mentioned defensive line, and his documents, amongst which he keeps the one referring to the mentioned fortification, were spared by the fire. In order to accomplish this enterprise we should place solid marks on the areas where building is prohibited, not only in the area within the defensive line, but also outside it. These marks should establish the areas not available to receive any stone made construction. The already existent wood made constructions should not be allowed to remain, being the surveyor ship obliged to demolish any of them any time it is ordered, without any compensation. On the contrary, the owners of the latter should pay to the mentioned surveyor ship, which is also responsible for the defensive line, whatever this institution will establish as acknowledgment of vassalage. In my opinion, the *Marquez Estribeiro mor Governador das Armas da Provincia da Extremadura e Corte* [Marquis Chief Equerry, Arms Governor of the County of *Extremadura* and of the Court] should have the responsibility of ordering this proceeding by Your Majesty's command.

11. This is what occurs to me for this 2nd Part, allowing for the mentioned 3rd Part which depends on a plan, for which execution I have found myself without any grounding and conveniences as the experienced destruction, which has gone through the most impassable places, as if it was sent to destroy everything which could be of any use to the survivors, being these, thus, devoid of their trades, but alive to remember what they had lost, also struck myself in order to show that nothing escaped from it, whatever insignificant it might have been. The situation in presence is not completely new, as similar cases have occurred before. However it is necessary to consider the differences between the various situations, as neither the people of London nor the people of Turin had been tormented as much as the Portuguese when those cities were renovated. The amount of work to be done varies according to the degree of the calamity and, equally, the easiness of the enterprise. In order to accomplish the latter, it will be of great aid the maintenance of healthy conditions: the dirty and still waters, not only on the *rua nova dos Ferros* but also in *Rossio*, which are drained, are a hazard as they corrupt the air. This is a responsibility of the Health Court [*Tribunal da Saúde*] and of the City Council Senate [*Senado da Câmara*], which rules the former, and I believe that this should not be neglected without incurring an offence against the regulation. Lisbon 16 February 1756.

Third Part

1st. In the last paragraph of the second part of the Dissertation regarding the renovation of Lisbon, I promised a third part relying mostly on plans and drawings. For lack of commodiousness, I cannot carry out this as I used to do, as I have to use other people's assistance without being present, which up until now I have not been able to obtain as a result of the deadly ordeal that we have witnessed. However, I am using the assistance of the engineers and trainees of the Military Academy, whom I decided to select. Showing to them the plan of the ruined Lisbon downtown, which only escaped from the voraciousness of the calamity as it was not in my possession, I explained to them the changes I wanted to present using new plans which could better picture the essence of the proposed solutions. In order to be able to see the relevance of the demanded improvement in case we wanted to use the amendment proposed at the beginning of the 4th paragraph of the second part, I ordered the *Ajudante* [Assistant] Pedro Gualter da Fonseca, accompanied by the *Praticante* [Trainee] Francisco Pinheiro da Cunha to undertake the amendment of the busiest narrow streets and some improvement of the larger streets on a plan of the ruined Lisbon downtown. Also, I ordered that he should replace the smaller alleys by new streets in order to see if this improvement was avoidable or inevitable, maintaining the Churches, Chapels and Parishes on their locations with their own land. He should also swap the width of the *Terreiro do Paço* with its length, extending it along the seaside in order to match the length of the *Casa da Índia* [India House] bridge, running, thus, the *Terreiro do Paço* lenghtwise from the Fortress to the west façade of the *Alfândega do Tabaco*. He should also build the Exchange House between the mentioned Custom House and the *arco do Assougue* [Shambles Arch], separated by two streets, one running from the mentioned Custom House and the other from the mentioned shambles in order to give access to the remaining square, between the mentioned Exchange House and the *Casa dos Contos* [State Finance Surveillance House]. The latter will have the same function, without, however, bothering the main square, demolishing, thus, the fortress and its parapet and building, lengthwise, at the end of this new square, some stairs allowing the disembarking in any tide without the use of boards and providing a location, between the *Caza da India* [India House] and the Fort, for the *Vedoria* [Surveyorship] and the Military Academy, which is represented on plan n. 1.

2. I gave to Captain Elias Sebastião Pope, accompanied by his son, Trainee Joze Domingos Pope, another plan of the ruined Lisbon downtown ordering to him another (plan for the) renovation (with the same purpose), with, however, the following difference: that he would not try to improve the narrow streets, or to maintain entirely the large ones, but, on the contrary, with the freedom he would judge as necessary, he would draw a new plan with all the prerequisites mentioned in the first instructions, which are presented on plan n.2 .

3. I gave to Captain Eugenio dos Santos de Carvalho, accompanied by the Assistant Carlos Andreas, another plan of the ruined Lisbon downtown in

order to draw on the same ground a new plan of Lisbon without any restrictions, and without any other constraint than the preservation of the Churches, Chapels and Parishes: which is presented on plan n. 3. I also recommended to all the three [mentioned engineers] that they would open squares in convenient places so these open spaces could allow the air to produce its good effects.

4. The three proposed interpretations show some variations which can be more or less agreeable, and my aim is solely to name them, not doubting that after considering the three proposed approaches we can still name better ones. To this end, it can be very useful the three mentioned representations, as it is by viewing an object than we can better judge its qualities or flaws. I notice, by using the same expedient, that on plan n. 3 the *Terreiro do Paço*, there represented, surpasses the area of a square. However, it seems to me well advised the quay drawn near the *Alfandega* [Custom House], which allows the loaded ships anchored there to be, with all the commodiousness, unloaded inside the mentioned *Alfandega* without the assistance of a bridge.

5. However, supposing that, after marking all the areas to be rebuilt and determining the commutation of the ruined ones, any of the proposed plans will be accepted, it needs yet to be chosen, with anticipation, the best manner to free the streets from all the obstructions which make them filthy, selecting the most appropriate of them all. Considering what is ordinarily used, which consists in carrying all the waste thrown out of the windows in carts driven by the *carretães*, there are only three methods to select from. I declare that the first [method] (which has been used in some countries) consists on the building of sewers running in the middle of the streets with capacity to receive all of the waters and all of the superfluities of the buildings and from these should run underground pipes in order to relieve the buildings to sewers. Some of these pipes were built in Convents and private buildings of this City and were also connected to the royal pipes, however in a reduced number. I affirm that the royal pipes, which are Lisbon's old sewers, are for the most in no condition to function properly as they are very deteriorated and as a result of the change in the layout of the streets, which will probably follow, they might require a relocation.

6. The second [method] consists in acknowledging that in some locations there is the use of carts for the collecting of the rubbish and solid waste. The carts go through the streets early in the morning in order to relief them and free them from most of the obstructions, remaining on those only the waters which are easily dissipated.

7. The third [method] consists in leaving free between every pair streets and the two rows of buildings, which form them in one of their sides, a narrow street of five or six palms, which it is called *alfugere*, with no doors but only windows, where is dumped the mentioned waste, which is usually collected in the Autumn by the *carretões* [sic] to be thrown away in specified locations. The mentioned *alfugeres* existed in some areas of this city, having, however, the inconvenience of infecting the olfaction of the inhabitants of the nearby houses who needed glass windows to minimize that inconvenient or to endure

it. Therefore, from the four mentioned methods, I consider as the best the building of underground pipes connecting to the sewers, where they exist; the use of carts, being in sufficient number, I judge in second place; and in third place and as the last, the usual and very used *carretães* and the *Alfugeres*, which besides their endless inconvenience also reduces the value of the properties. The considering of the variety of the expense can substantially change my deliberation, which I leave, as everything else, to the best consideration.

8. To the deliberation of maintaining Lisbon's streets free from the obstructions that make them filthy, for which it will much concur the enlargement of the streets and the reduction in the buildings' heights, which should not exceed the two storeys above the shops, it necessarily follows another, which is not less important and consists in determining the best place where the dumping of the mentioned obstructions can be done with less inconvenient. It occurs to me a place, which is freer of the said obstructions than those already mentioned and promises a great benefit to the public well being, thus it is licit for me to present it here. It consists in dumping the mentioned obstructions into the *Sacavem* river in order that, with this assistance, a valley similar to the one in *Chelas*, where the salty sea waters reached, some time ago, the temple of the Vestal Virgins, today known as the Convent of the *Santo Agostinho* nuns, can be formed. If this small valley can so agreeably provide to Lisbon its vegetables and fruits, the *Sacavém* valley will do it even better as it is much wider. We cannot say that the waste dumped there can cause any obstructions at the bay, as we can fear from any of the other methods of waste dumping in land. This proposal can have against it the blockage of the boats seeking for a harbour. However, we can reply that neither the boats need the entire *Sacavém* river stream as a shelter, nor it would be fair to prevent them from seeking it as a harbour. We could only form as a valley the area that could not represent a hindrance for the boats, which it would always be very profitable.

9. Also, it seems that we need to attend, with anticipation, to the pipes conducting the water to the fountains in order to feed the people, to extinguish the fires and for the embellishment of the squares. It seems very reasonable to improve, in this matter, this ruined downtown. On the *Terreiro do Paço*, we could use the water coming from the *Cruzes da Sé* [Cathedral Crosses]. On the *Rossio* square, the fountain can receive from the *Bairro Alto* more and safer water, remaining the one which is currently using in its origins, the *Desterro*, where is also needed to the large amount of people living lately in this district. As a result of its great privileges, the *Hospital Real de Todos os Santos* [All Saints Royal Hospital] deserves all the needed water. *Victoria* square is rightly demanding to the *Bairro Alto* help with the water supply. The S.José District justly follows the latter in this demand, as it will be taken from the *Campo do Curral* [Corral Field] where there is lack of it. To these mentioned downtown areas cannot be refused this help, as it would not be superfluous to supply each street with a fountain and each house with a source of water. If it is not possible to achieve this totally, at least we should try to do it partially. Therefore, we should make some effort in order to bring together a greater number of streams. To this end, two pipelines have been

built in the aqueduct, which supplies the water to the *Bairro Alto*. However, up until now these have not been used according to the urgency that this matter requires. This can still be achieved if we use the sketches outlined at the time, which, despite having being consumed by the fire, are still able to provide some information with regard to the initial idea.

10. As the water without any supply devices, is like a sword without an arm, as the water pumps usually are, these should be distributed in convenient locations, at least one in each parish and nearby its Church, for which it will be determined a specified building. The *andador* [errand-boy of a religious brotherhood] of the *Irmandade do Santíssimo Sacramento* [Holy Sacrament Brotherhood] should be the keeper of the key of the latter, as he is usually assisting in the church or in its environs. The leather buckets, in a considerable number, are inseparable from the water pumps, in order to promptly and safely assist in this procedure. The return of the former should be enforced by a dreadful penalty applied to anyone who will not restore the buckets to their correct location, leaving them misplaced.

11. I cannot avoid to add that it is needed a special attention to the election of the people who will be responsible for the execution of the difficult task of renewing Lisbon downtown in order to do it free from the obstructions which can be found, or to include the correspondence between the old and the modern, in the situations where is needed a change from the old to the new, which is where resides the main difficulty. For which solution, I judge as insufficient the plans' annotations, being necessary to carry out a survey on the ground with all the precautions which the matter requires. If it is correct that the *getipé* [sic] [*petipé* – reductive rule used by the architects in the sketching of plans] is not used in the old cities' plans, for their customary irregularity, it is also right that we cannot use these as if they were a regular plan of a convent or a palace. Even if our plan of the old Lisbon has the advantage of the use of the *petipé*, we should not go through it without using a continued straight line as a result of the mentioned commutation, as the building of a new city, without having to consider the existence of another urban structure, linking it to an old one as happened in Turin, will be more amusement than work. To perform this task I believe that the most suitable choices will be the lieutenant-colonel Carlos Mardel and the Captain Eugénio dos Santos, as they are professional engineers and the first architects in what concerns civil architecture.

12. As we still do not know the method which will be used to compensate the owners of the ruined properties, and as I thought that the survey, currently being carried out in each district, included the appraisal of the buildings, which is not correct as it only consists in the measurement of the different properties and in clarifying some aspects which do not include any appraisal, I am forced to understand that either this appraisal is going to be carried out on a second phase or the aim is only to measure the properties in order to exchange them for others. Since the renovation of the downtown, by the enlargement of the streets, is going to change totally the location of the buildings, which are not intended to be appraised, it seems to me that the purpose of the mentioned transposition is to establish a correspondence between the properties in what

regards their location, e.g. if they are more or less close to the sea, and their dimension. However, we do not believe that as a result of the increase in the width of the streets there will be enough properties left to compensate for the ruined buildings. Following this assertion, if the properties are going to be exchanged by others of the same dimension, we will lack of properties to compensate for most of the old buildings. [Thus,] these will be trade off with properties in other established locations or for money in case the owners are not pleased with the mentioned exchange. However, it could be rightly judged that the exchange of properties should be done according to another method, e.g. to establish the total of the ruined area and the total of the area to be built and to carry out the exchange of the private properties observing the relation between these two areas. In this situation, it would not be necessary the use of supplementary properties and all properties would have corresponding areas, even if smaller than the old ones. The landlords of the streets eliminated by the opening of large streets would be more interested in this method. In case that the diversity will not be an obstacle for the compensation to be carried out, it is left to consider how we will compensate some creditors for the area more or less lacking or in excess, in order to rebuilt properly. In the 6th paragraph of the 2nd part of this dissertation we suggested, as a way of compensation, the appraisals of the properties, which we thought were being carried out. However, as I now acknowledge that this process has not been carried out, and as I do not see how to obtain a supplement for the above referred to situations without using the appraisals, it seems to me that they are unavoidable if we want to follow the mentioned method of compensation. In case that these are carried out, it would be good to have present [sic] the buildings and have their re-measurement done in order to amend some appraisals, which I know require it, as they were not always witnessed by the most competent persons.

13. The Lisbon City Council, which has already dealt with this matter in the case of the *ourives da prata*, *ourives do ouro* and *douradores* streets, could not find [at the time] a better method than to take possession of the appraised houses which were to be amended and to built at its own expense, selling for the best offer in order to pay to the creditors. It may well be that, after the appraisal of a parish's ruined buildings and erected the new buildings, their sale can equal both the value of the destroyed buildings and the cost of the rebuilding. As the ruined downtown cannot be all rebuilt at the same time, it seems appropriate to carry out this experiment on one of its parts, e.g. the *S.Julião* parish between the *rua dos ourives do ouro* and the *rua nova do Almada*, as it has a considerable number of alleys and narrow streets, which represent the greatest problem. Given its convenience, I advise the city council to establish the layout of the streets in order to rebuild as soon as possible with regularity.

14. In London and in Turin took place the two most well-known reconstructions of European cities. I was wishing to learn, with all the details, how these were carried out, without having any books or a public library, which had never before seemed to me as needed, being this the right moment to establish it even if not as large as the largest libraries, some of which began smaller. Thus, I was forced to beg for a History of England, including

the year of 1666, where I could not find any useful news. Seeing in Martinière's Geographic Dictionary a description of London, where the author indicates the streets as the ones in our town of Tomar, I also could not find there anything useful, which I could get if I had more material to examine. The renovation of the city of Turin was not as some say the demolishing of the old Turin to build the new Turin, since it was simply the linking of the new Turin to the old Turin, making an addition to Turin on a flat adjacent area which was not a difficult task to accomplish. Therefore, I conclude that the renewing of the destroyed Lisbon needs a lot more of deliberation than the extension of the added Turin [sic].

It remains to establish if the main streets should be divided in three sections as the ones in England and if we should built porticos or arcades in some streets as we had in the *rua nova dos ferros* and in *Confeitaria*. Concerning this matter, I think that it would be useful and embellishing to build arcades on the *Terreiro do Paço*, although on the commercial streets I think that this will not be convenient. The old arcades of the *rua nova dos ferros* can be of use to the businessmen for lack of a Stock Market. However, those will not be necessary if the Stock Market is, as I believe, going to be built on the *Terreiro do Paço*. I affirm that the streets in England are formed of three sections, the middle one, which is larger, is for the coaches and the two sideways are for the pedestrians. The former is made of small pebbles and the latter of larger ones and small posts divide them in order to keep the coaches away from the pedestrians sideways. The main streets are there too large. We could avoid this by [opening streets] of forty or forty-five palms of width, giving ten palms to each sideway and remaining what is left for the coaches. However, I am not inclined to this street division, as the good condition of the streets, given their moderate width, cannot be kept on the festivity days and public gatherings. This division is more suitable for some of the streets in England, as they are wider. In our ruined downtown, it will consume a large portion of ground and the landlords, who are not allowed to build more than two storeys above the shops, will claim against the enlargement of the streets caused by their division in three sections.

On plan nº 4, I present another reconstruction of the ruined downtown expressed, with all the freedom possible, by the Assistant Pedro Gualter da Fonseca, without attending to the site of the old parish churches. [This plan] is to be taken into account in case the latter problem will not be considered an obstacle to the mentioned change.

15. In 5th place, I offer a plan of a street with 60 palms of width, similar to some of the three section streets in London: the middle section of 40 palms of width for the coaches and people on horseback and the two on the sideways of 10 palms of width, each one, for the pedestrians and sedan-chairs, divided by posts and pavement as shown on the elevation. On the same elevation there is the picture of the Sewer, or Royal Pipe for the drainage of the waters coming from the hills, and cleaning of the building conducts.

16. In 6th place, I offer the first prospect showing the height and proportion of the buildings. The first prospect with French doors and the second with windows and party walls above the roofs for the prevention of fires.

17. In 7th place, I offer a second prospect showing the height and proportion of the buildings with two storeys above the shops and both with French doors and party walls for the prevention of fires.

18. In 8th place, I offer the 3rd prospect showing the height and proportion of the buildings, with their porticos, or arcades, [as a shelter] against the severity of the weather, with two storeys above the shops, and both with French doors and party walls above the roofs for the prevention of fires.

19. In 9th and last place, I offer a design of a more noble building for the *Terreiro do Paço* with its porticos, with mezzanines, against the severity of weather, two storeys with French doors (that can be reduced to one storey as it seems to high) and another mezzanine storey near the roofs; and party walls for the prevention of fires. All of these last five pictures were made by Captain Eugénio dos Santos Carvalho.

And this is all that was possible to gather in this 3rd part, keeping the rest for the 4th. Lisbon 31 March 1756.

Addition

In tenth place I put forward plan nº 5 for the reconstruction of the ruined Lisbon downtown without attending to the maintenance of the old site of the temples, designed by Captain Eugénio dos Santos e Carvalho on which is represented, in yellow, what is to be newly made and in red what is kept as it was.
In eleventh place, I present plan nº 6 for the reconstruction of the ruined Lisbon downtown without attending to the maintenance of the old layout created by Captain Elias Sebastião Pope. Lisbon 19 April 1756. *Manuel da Maya*

* This text was translated from a transcription of the original published in José-Augusto França, *Lisboa Pombalina e o Iluminismo*, Bertrand Editora (Lisboa, 1983).

## Notes

1. Late medieval propriety system which established the eldest son as the only inheritor.

2. Late medieval juridical form by which proprieties or goods were given or donated to a parish priest, monastery or a church for religious services on behalf of the donator's soul not being allowed their alienation.

3. A medieval juridical privilege, in this case the right of use of a propriety, which implied the payment of a stipulated sum, later a rent.

## 2. Chronological table: building legislation and town-planning ventures (Lisbon, Edinburgh and London).

This chronological table lists some of the most significant town-planning events in the three considered study-cases: Lisbon, London and Edinburgh.

| Year | Month/Day | City | Reign | Event |
|---|---|---|---|---|
| 1580 | June/ 7 | **London** | Elizabeth I | **Proclamation**: forbidding new buildings within 3 miles of the city gates. |
| 1592 | | **London** | Elizabeth I | **Act of Parliament**: forbidding new tenements within the cities of London and Westminster (exemption for the upper classes). |
| 1607 | | **London** | James I | **Ordinance**: reinforcing the Act of Parliament of 1592 and restricting the use of wood in the buildings erected on old foundations. |
| 1615 | | **London** | James I | **Decree**: exposition of the royal works carried out during the king's 12-year reign, praising and exhorting the building for public benefit and embellishment of the city, namely the use of brick instead of wood: " it was said by the first Emperor of Rome, that he found the Citie of Rome of Bricks and left it of Marble, So that Wee whom God hath honoured to be the first King of Great Britain, might be able to say in some proportion, That Wee have found Our Citie and Suburbs of London of Sticks, and left them of Bricks being a Meteriall farre more durable, safe from fire, beautiful and magnificent". |
| 1619 | | **London** | James I | **Proclamation**: considered the first of the "Building Acts", with a detailed specification of building rules in the city of London, e.g. storey height (storey: 10 foot; half storey: 7 foot) thickness of walls (two storeys; 1 ½ bricks; more than two storeys: cellar, 2 bricks; upwards, 1 ½ bricks); windows (jambs and heads: brick or stone), façades (front walls: brick or stone) and shop fronts (on main streets, with stone or brick pilasters and heads in arch as both a support and an embellishment device). |

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| 1620 | | **London** | James I | **Proclamation**: new building rules for the city of London, e.g. storey heights; thickness of walls; walls of stone and brick; enforcing of the use of stone and brick; preventing any building work on old and ruinous buildings. |
| 1624 | July/14 | **London** | James I | **Ordinance**: reinforcement of the latter. |
| 1625 | May/2 | **London** | Charles I | **Proclamation**: reinforcement of the previous; standardization of the bricks. |
| 1630 | July/16 | **London** | Charles I | **Ordinance**: reinforcement of the previous legislation, exempting, however, the buildings on London Bridge to be built of stone or brick: "Provided always that for so much as concerneth the building with bricke or stone shall not extend to any buildings upon London Bridge which by reason of the situation thereof cannot with inconvenience be so built". |
| 1630/32 | | **London** | Charles I | **Covent Garden. Architect: Inigo Jones. Landowner and investor: 4th Earl of Bedford** |
| 1635 | | **London** | Charles I | **Leicester Square** |
| 1636 | | **London** | Charles I | **Decree (Starre Chamber)**: reinforcing the regulation against the division in tenements of the old buildings and the buildings of new houses. It blames the landlords for the proliferation of tenements and compels them to support the deprived: "The Court therefore ordered that the owners of these buildings should contribute towards the maintenance of the poor". |
| 1638 | | **London** | Charles I | **Projects for Whitehall Palace. Architect: Inigo Jones.** "This latter scheme shows more clearly the basic intentions of the new palace. It was to be, in a very public as well as royal sense, the administrative centre of the kingdom; and Inigo's main source was the Vitruvian *forum*, as interpreted by Palladio in his third book" (Summerson, John, *Architecture in Britain 1530-1830*, p. 126). |

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|---|---|---|---|---|
| 1642/48 | | **London/Edinburgh** | **Civil War** | |
| 1649/60 | | **London/Edinburgh** | **Commonwealth** | |
| 1656 | | **London** | | **Act**: preventing the profusion of buildings in the suburbs of London and reinforcing the use of brick and stone. |
| 1660/1684 | | **London** | Charles II | **St. James's Square**. Lease granted to the Earl of St. Alban's. |
| 1661 | August, 16 | **London** | Charles II | **Proclamation**: reinforcing the previous rules with regard to the use of brick and stone and the control of the building within the cities of London and Westminster and limits. |
| 1661/1665 | | **London** | Charles II | **Bloomsbury Square. Landowner and investor: 4th Earl of Southampton.** Considered the 1st of the London's squares. |
| 1665 | January, 24 | **Lisbon** | D. Afonso VI | **City Council Minute**: refers to the opening of the *Rua Nova do Almada* (*Almada* New Street). |
| 1666 | September, 2 | **London** | Charles II | **The Great Fire of London:** "Nearly four-fifths of the city was destroyed including St. Paul's and eighty-seven Paris Churches, the Guildhall, the Royal Exchange, The Custom House, forty-four Halls of the City Companies, four Prisons, four Gates, numerous commercial buildings and thirteen thousand two hundred houses. Two hundred thousand people were rendered homeless. The loss was estimated at ten million pounds" (Knowles, C.C., *The History of Building Regulation in London 1189-1972*, p. 28) |
| | September, 13 | **London** | Charles II | **Proclamation:** announcing the following royal intents: to rebuild the City in stone and brick, to widen the narrow streets and to reduce the number of alleys, to improve the riverbank, to establish a fair compensation for the properties to be "sacrificed for the publick benefit or convenience"; to carry out a survey directed by the following commissioners, Dr. Wren, Hugh May and Roger Pratt (royal representatives); Robert Hooke, Edward Jerman and Peter Mills (city representatives) |

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| | | **London** | Charles II | **Plans** for the rebuilding by **Wren, Evelyn, Newcourt, Hooke and Knight.** (The 19th September, Hooke presents his plan to the Royal Society). |
| 1667 | February, 8 | **London** | Charles II | **Act**: New buildings within the limits of the City should conform to the building regulation to be established; builders to demolish or amend the buildings in accordance without delay; appointment of "discreet and intelligent person or persons" as surveyors; 4 types of buildings – fronting by-lanes; fronting streets and lanes of note; fronting high and principal streets; mansion houses (construction specifications); enforcement of the use of brick and stone with the exception of some elements of the façade, e. g. window-frames, door-cases, shop fronts; height of no more than 4 storeys; streets to be widen; alleys of no less than 14 feet in width; construction of common sewers; 39 churches to be rebuilt; sign posts to be fixed to the façades; **establishment of the Fire Court** to deal with propriety quarrels. |
| 1670 | February, 6 | **Lisbon** | D. Pedro II | **Decree**: orders the construction of the headquarters of the *Junta do Comércio Geral* (General Commerce Association) in the *S.Paulo* district. |
| 1671 | | **London** | Charles II | **Proclamation**: ordering the demolition of some irregular and defective buildings erected in the suburbs. |
| 1673 | March, 9 | **Lisbon** | D. Pedro II | **City council representation to the king (*Consulta da Câmara ao Rei)*: Enlargement of the *Rua Nova da Palma* (*Palma* New Street).** |
| 1674 | November, 16 | **Edinburgh** | Charles II | **A fire incident at Todrig's Wynd** led to a visit of the council and deacons of crafts to the area: recommendation that all of the **High Street** buildings should be of the same height with regular façades. |
| 1676 | November, 23 | **Lisbon** | D. Pedro II | **City Council representation to the king**: Enlargement of the ***Rua dos Ourives da Prata*** **(Silver goldsmiths Street).** |

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| 1677 | August, 23 | **Lisbon** | D. Pedro II | **City council representation to the king**: refurbishment and improvement of the *Belém* quay. |
| 1678 | July, 1 | **Lisbon** | D. Pedro II | **City council representation to the king**: proposing the demolishing of the *Terreiro do Paço* parapet in order to build a quay. |
| | September, 16 | **Lisbon** | D. Pedro II | **City council representation to the king**: refers to the works of the new *Fundição* (Foundry) and the *Santa Apolónia* quays. |
| 1680 | | **Edinburgh** | James II | **Project of a bridge over the North Loch** |
| 1681 | September, 16 | **Lisbon** | D. Pedro II | **Decree**: orders the refurbishment of all the bridges and roads in the Lisbon area. |
| | | **London** | Charles II | **Soho Square. Architect: Gregory King** (Chancellor, *The History of the Squares of London*) |
| 1683 | June, 4 | **Lisbon** | D. Pedro II | **City council representation to the king**: refers to the need to demolish all the houses built on the city walls for the embellishment of the city. |
| 1684 | | **London** | Charles II | **Lincoln Inn Fields. Architect: Inigo Jones.** |
| 1684/1688 | | **Edinburgh** | Charles II | **Milne's Square. Architect: Robert Mylne.** |
| 1686 | September, 13 | **Lisbon** | D. Pedro II | **Secretary of State Letter**: enlargement of the ***Rua dos Ourives do Ouro*** **(Goldsmiths Street)**. |
| 1686/1698 | | **London** | James II | **Red Lion Square**. Built by **Nicholas Barbon**, the most active speculative builder of the period. |
| 1687 | November, 14 | **Lisbon** | D. Pedro II | **City Council representation to the king**: refurbishment of the *Santarém* quay. |
| 1689 | October, 25 | **Lisbon** | D. Pedro II | **Decree**: refers to the need to give to Lisbon an efficient lighting system comparable to the major European capital cities. Mentions the advantage of sending to Paris a consulting commission. |
| 1690 | October, 6 | **Lisbon** | D. Pedro II | **City Council Accord**: establishing the requirement of building licences for any building works in Lisbon or its surrounding area. |
| 1695 | | **London** | William III | **Grosvenor Square** |
| 1698 | | **London** | William III | **Berkeley Square** |
| | | **London** | William III | The new **St. Paul's Cathedral** is |

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| | | | | completed (with the exception of the dome). **Architect: Christopher Wren**. |
| | | **Edinburgh** | William III | **Act of Parliament**: establishes for the first time a number of building rules for the whole city. Mainly directed to the prevention of fire: thickness of walls, restriction of the use of wood, safety measures in the building of chimneys and forbidding buildings of more than 5 storeys. |
| 1701 | November, 16 | **Lisbon** | D. Pedro II | **Secretary of State Letter**: construction of a new Gunpowder House in the *S. Paulo* District. |
| 1702 | October, 27 | **Lisbon** | D. Pedro II | **City council representation to the king**: enlargement of the ***Rua de Nª Srª dos Remédios*** **(*Nª Sr.ª dos Remédios* street)**. |
| 1703 | March, 10 | **Lisbon** | D. Pedro II | **City council representation to the king**: refurbishment of the pavements of the ***Rua Nova do Almada*** and ***Calçada de Santa Ana***. |
| 1704 | March, 5 | **Lisbon** | D. Pedro II | **City council representation to the king**: refurbishment of the pavements of the ***Rua Nova do Almada***, ***Rua de Paio Nabais*** and ***Calçada do Chiado***. |
| 1706 | May, 21 | **Lisbon** | D. Pedro II | **City council representation to the king**: refers to the project of the **new quay** to be built on the ***Terreiro do Paço***. |
| 1707 | | **London** | Anne | **Act**: prevention of fires in the cities of London and Westminster; enforcement of the building of party wall parapets. |
| 1708 | | **London** | Anne | **Act**: reinforcing and extending the latter. Building specifications for the prevention of fire, e.g. no brickwork or stone work in façades or party and partition walls to be supported by any sort of woodwork; door frames and window frames to be placed 4 inches into walls. |
| 1709 | September, 11 | **Lisbon** | D. João V | **City council representation to the king**: refers to the refurbishment of the ***Terreiro do Trigo*** **(Wheat Warehouse)**. |
| | February, 20 | **Lisbon** | D. João V | **Secretary of State Notice**: orders the refurbishment of the pavements of the ***Rua do Chiado***, ***Rua Nova do Almada***, ***Rua da Calcetaria*** and ***Rua*** |

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| | | | | ***Nova dos Ferros.*** |
| 1714 | August, 29 | **Lisbon** | D. João V | **City council representation to the king**: refers to the building of the *Menino Deus* (Infant God) Church and Hospital. |
| 1717 | | **London** | | **Hanover Square.** |
| 1718 | October, 14 | **Lisbon** | D. João V | **City council accord**: reducing the size of the balconies for the easiness of traffic. |
| 1719 | | **Lisbon** | D. João V | **Plans for a Royal Palace and a Cathedral** in the western district of *Buenos Ayres* (never carried out). **Architect: Filippo Juvara.** |
| 1723 | | **Edinburgh** | George I | **Act of Parliament**: drainage of the North Loch |
| 1724 | | **London** | George I | **Act**: prevention of fires; building specifications of party walls. To be enforced in "the Cities of London and Westminster (except houses on London Bridge or on the river Thames below Bridge) St. Marylebone, Paddington, Chelsea and St. Pancras". |
| 1725/1730 | | **London** | George I | **Grosvenor Square** (completed c. 1730). Built by John Simmons (east side); and Edward Shepherd (north side). "With the completion of Shepherd's Grosvenor Square houses (...) the development of urban design in London ceases, for a time, to be of much interest. The story, however, continues and reaches its climax in Bath ...". (Summerson, John, *Architecture in Britain ...*, p. 359). |
| 1728 | | **Edinburgh** | George II | **Earl of Mar**: pamphlet suggesting the expansion of the city northwards. |
| | | **Lisbon** | D. João V | ***Paço da Ribeira* (*Ribeira* Royal Palace)** on the *Terreiro do Paço* – refurbishment works |
| 1731 | May, 12 | **Lisbon** | D. João V | ***Águas Livres* Aqueduct** – beginning of the construction. **Architects: Manuel da Maia, Custódio Vieira, Carlos Mardel** amongst others. |
| 1731 | November, 6 | **Lisbon** | D.João V | **Manuel da Maia** presents to the king the document: *Considerations on the project for the carrying of the Waters, named Free Waters, to the Bairro Alto; and explanation of the mentioned considerations, offered to his lordship D.João V, by Manoel da* |

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| | | | | *Maya 1731* (*Consideracções sobre o projecto da conducção das Aguas; chamadas Livres, ao Bairro Alto; e explanações sobre as mesmas considerações, offerecidas ao Sr. D. João 5°, por Manoel da Maya 1731*). |
| 1735 | January, 11 | **Lisbon** | D. João V | **City council representation to the king**: enlargement of the ***Rua das Farinhas*** **(Flour Street)** |
| | November, 28 | **Lisbon** | D. João V | **Decree**: orders the refurbishment of all of the street pavements in Lisbon. |
| | | **Lisbon** | D. João V | **The *Mãe d'Água* (Main Water Deposit)** is built in the *Rato* district. **Architect: Carlos Mardel.** |
| 1740 | | **Lisbon** | D. João V | ***Patriarcal* Church** – begins the construction. **Architect: J. F. Ludovice** |
| 1741 | | **Lisbon** | D. João V | **Silk Factory building** is completed in the *Rato* district. **Architect: Carlos Mardel** (attribution by Rossa, Walter, *Além da Baixa: Indícios de Planeamento urbano na Lisboa Setecentista*) |
| 1742 | August, 18 | **Lisbon** | D. João V | **City council representation to the king**: refers to the covering of **the public sewers** on the ***Terreiro do Paço*** by **Carlos Mardel.** |
| | August, 25 | **Lisbon** | D. João V | **City council representation to the king**: refers to the building of the ***Cais da Pedra*** **(Stone Quay)** on the ***Terreiro do Paço***. Plan by **Custódio Vieira.** |
| | September, 10 | **Lisbon** | D. João V | **Secretary of State Letter**: plan for a **quay alongside Lisbon's shoreline. Architect: Carlos Mardel** |
| 1743/1750 | | **Lisbon** | D.João V | ***Nª Sr.ª das Necessidades*** **Palace and Convent. Architect: Custódio Vieira.** |
| 1743 | March, 15 | **Lisbon** | D. João V | **City council representation to the king**: refurbishment of the **public sewers** of the **district of *S. José*, *Terreiro do Paço* and *Marvila*** by **Carlos Mardel.** |
| 1743 | December, 2 | **Lisbon** | D. João V | **City council representation to the king**: refurbishment of the ***Cais da Pedra*** on the ***Terreiro do Paço***. |
| 1744 | October, 3 | **Lisbon** | D. João V | **The *Águas Livres* Aqueduct** reaches the northwest district of *Rato* where the main deposit (*Mãe d'Água*) was built. |

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| 1745 | April, 13 | **Lisbon** | D. João V | **Decree**: establishing a number of building and town-planning rules, e.g. a minimum of width for any secondary street or alley (5 *varas* – 5 x 1.10 m) and for the main streets the width and proportion of the new streets, as it was the case of the *Rua dos Ourives do Ouro*. |
| 1751 | November, 13 | **Lisbon** | D. João V | **Dispatch**: ordering the city council architect to be present in all of the surveys to the public buildings and works regarding the embellishment and the regular layout of the city. |
| 1751 | September | **Edinburgh** | George II | **Sudden ruin of a tenement in the old Town** – the City Council proceeded to the survey of the area and decided to demolish a significant number of others. |
| 1752 | April, 26 | **Lisbon** | D. José I | **City council representation to the king**: enlargement of the ***Rua da Correaria***. |
| | July, 8 | **Edinburgh** | George II | **Convention of the Royal Burghs** – decides to build a Merchant's Exchange, a national archive and a Town Council headquarters. |
| | | **Edinburgh** | George II | ***Proposals for carrying on certain Public works in the City of Edinburgh*** – attributed to Sir Gilbert of Minto, although with the contribution of George Drummond, Lord Provost of Edinburgh. It proposes the extension of Edinburgh to the North and South and the construction of a number of public buildings in order to improve the city's conditions and image. Berlin, Turin and, mainly, London are referred to as models. |
| 1753 | | **Edinburgh** | George II | **Act of Parliament**: "For erecting several Public Buildings in the City of Edinburgh; and to impower the Trustees therein to be mentioned to purchase Lands for that purpose; and also for Widening and Enlarging the Streets of the said City, and certain Avenues leading thereto". |
| 1755 | | **Lisbon** | D. José I | Completion of the **Opera House** on the *Terreiro do Paço*. **Architect: Bibiena** |
| 1755 | November, | **Lisbon** | D. José I | **A major earthquake** strikes Lisbon |

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| | 1 | | | and ruins the city centre and the adjacent areas. 10 000 people are killed. |
| 1755 | November, 4 | **Lisbon** | D.José I | **Decree**: establishes that all of the healthy homeless and beggars should be arrested and forced to work on the clearing and rebuilding of the destroyed city. |
| | November, 29 | **Lisbon** | D. José I | **Decree**: orders a topographic relation of all of the ruined areas in order to protect the propriety rights. |
| | December, 3 | **Lisbon** | D. José I | **Decree**: forbids a rent rise in all the houses spared by the earthquake. |
| | December, 11 | **Lisbon** | D. José I | **Notice**: to Manuel da Maia to command the clearing of the debris and to make a relation of the slopes. |
| | December, 22 | **Lisbon** | D. José I | **Notice**: to Manuel da Maia to establish the boundaries of the ruined properties. |
| | December, 30 | **Lisbon** | D. José I | **Edict**: forbids the rebuilding of any destroyed houses before the conclusion of the register of all the ruined properties ordered the 29 November. |
| 1756 | January, 2 | **Lisbon** | D. José I | The ***Junta do Comércio*** **(Commerce Association)** donates 4% of the imports for the reconstruction of the following public buildings: **Customs House** and **Stock Market**. The ***Junta do Comércio*** is also appointed to control the mentioned public works. |
| | January, 31 | **Lisbon** | D. José I | **Notification**: 300 soldiers are employed in the clearing of the following downtown districts: *Rossio, Rua Nova* and *Remolares*. |
| | February, 2 | **Lisbon** | D. José I | **City Council instruction**: to proceed to the demolition of all of the illegal new buildings. |
| | April, 14 | **Lisbon** | D. José I | Establishment of the ***Casa do Risco das Obras Públicas*** **(Public Works Drawing House).** |
| | June, 16 | **Lisbon** | D. José I | **Eugénio dos Santos** is appointed director of the ***Casa do Risco***. |
| 1757 | | **London** | George II | Opening of **The Marylebone Road** linking Edgware Road to Islington. |
| | | **Lisbon** | D. José I | **Robert Adam's sketches for the rebuilding of the city.** |
| 1758 | January, 16 | **Lisbon** | D. José I | **Decree**: allows the building of the **New Custom House** and the **Stock** |

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| | | | | **Market** by the ***Junta do Comércio***. |
| | May, 12 | **Lisbon** | D. José I | **Charter**: refers to the private builders' rights and obligations and considers propriety compensations. |
| | June, 2 | **Lisbon** | D. José I | **Charter**: confirms and ratifies the latter. |
| | June, 16 | **Lisbon** | D. José I | **Decree**: determines and clarifies the application and the implementation of the downtown plan. |
| 1758 | | **Edinburgh** | George II | **Thomas Allan, Dean of Guild** acquires some **lands in the area of the present Charlotte Square** for the amount of £1,050 sterling: "From 1758 the Town Council appears to have operated an active land acquisition policy apparently geared towards formation of the New Town on a geometric pattern". (Grant, Ian D., "Edinburgh's expansion: the background to the new Town", *James Craig 1744-1795*, p. 19). |
| 1759/1769 | | **Lisbon** | D. José I | ***Águas Livres Quarter***: project. **Architect: Carlos Mardel.** |
| | March, 14 | **Lisbon** | D. José I | **Decree**: establishing the importance of the prompt execution of the ***Praça das Amoreiras*** **(*Amoreiras* square)** building project. |
| | June, 16 | **Lisbon** | D. José I | **Edict**: the ***Regedor das Justiças*** **(Justice Superintendent)** orders the propriety allotment of the ***Rua Augusta*** **(*Augusta* Street)**. |
| | June, 15 | **Lisbon** | D. José I | **Decree**: clarifying and enforcing the **Charter** of **12 May 1758** |
| | June, 16 | **Lisbon** | D. José I | **Charter**: forbidding any decorative or building elements which do not conform with the projected façade designs and proportion. |
| | June, 19 | **Lisbon** | D. José I | Directives to the proprietors with regard to the building in the ***Baixa*** and ***Rossio*** areas. |
| | July, 7 | **Lisbon** | D. José I | **Decree**: ordering the demarcation of the area of the **new royal palace** in the ***S. João dos Bemcasados*** area |
| 1759 | July | **Edinburgh** | George II | ***General Heads Relating to the Intended Enlargement of the Limits of the City of Edinburgh*** – defines the boundaries of the extension which comprehended an area wider than the future New Town; establishes a |

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| | | | | committee of trustees to control the feuing of lands and the building of houses and sets up the trade rights for the Old Town and New Town burgesses. |
| | | **Edinburgh** | George II | ***Proposals for extending the Limits of the City of Edinburgh, Impartially considered*** – pamphlet against the above mentioned document. |
| 1760 | September, 1 | **Lisbon** | D. José | **Carlos Mardel** is appointed Director of the ***Casa do Risco das Obras Públicas*** **(Public Works Drawing House)** after the death of **Eugénio dos Santos** (born in 1711) in August. **Mateus Vicente** is appointed the city council architect and **J. Monteiro de Carvalho** is appointed the ***Conselho da Fazenda*** **(Treasury Council) architect.** |
| | October, 28 | **Lisbon** | D. José I | **Edit**: the ***Regedor das Justiças*** **(Justice Superintendent)** establishes the propriety allotment of **the downtown.** |
| | November, 5 | **Lisbon** | D. José I | **Decree**: allocation of the diverse crafts **on the downtown streets,** which are named accordingly. |
| 1760 | | **Lisbon** | D. José I | **The *Companhia Reedificadora*** **(Rebuilding Company)** is active in the ***Cotovia*** area. |
| 1760 | | **London** | George II | **Act**: enlargement of some streets, lanes and passages in London and opening of new streets; regulation with regard to defective buildings. |
| 1763 | September, 9 | **Lisbon** | D. José I | **Miguel Angelo de Blasco** is appointed director of the ***Casa do Risco*** and director of the ***Águas Livres*** **(Free Waters) Aqueduct** after the death of **Carlos Mardel** in early September. |
| | March, 9 | **Edinburgh** | George III | **Proposal** presented by **Lord Kames** to the **Town Council** recommending the prompt building of a bridge connecting the old town to the area to the North. |
| | July | **Edinburgh** | George III | **"A Plan and Elevation of the Bridge Intended to be Built over the North Loch, Edinburgh"** by **James Craig** is published in the *Scots Magazine*. |

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| 1763/1772 | October, 21 | **Edinburgh** | George III | **North Bridge**: foundation stone ceremony (opened, unfinished, to public use in **1772**). **Architect: William Mylne.** |
| 1764 | | **Lisbon** | D.José I | Begins the construction of the ***Passeio Público*** **(Public Promenade)** |
| | | **London** | George III | **Act**: reinforcing and specifying building procedures, namely with regard to fire prevention; enforcement of thorough surveys upon new buildings; specifications with regard to the paving, lighting and cleaning of the streets. |
| 1765 | | **London** | George III | **Act**: introducing some amendments, namely with regard to party walls (9 inches high) and the thickness of walls (cellar: 2 ½ bricks; above storeys: 2 bricks); forbidding the inclusion of bond timbers in walls. |
| | | **London** | George III | **Act**: reinforcing the previous and enforcing the demolition of defective walls and buildings. |
| 1766 | January, 21 | **Lisbon** | D. José I | **Charter**: annulling the old feuing contracts in order to easy and speed up the rebuilding. |
| | January, 29 | **Edinburgh** | George III | **Town Council Minute**: appointment of a subcommittee to prepare the planning of the **New Town** and advertisement of a competition for "the best plan for the New Town" (the latter was controlled by the Bridge Committee). |
| | May | **Edinburgh** | George III | **Bridge Committee Minute (New Town competition)**: six plans were presented. |
| | June | **Edinburgh** | George III | **Bridge Committee Minute (New Town competition)**: another plan is presented. |
| | July | **Edinburgh** | George III | **Bridge Committee Minute: Plans** to be examined by **Sir Jame Clerk, Commissioner George Clerk, Lord Kaimes** and **John Adam.** |
| | August, 2 | **Edinburgh** | George III | **Bridge Committee Minute: Commissioner Clerk** and **John Adam** consider that **Plan n°. 4** "is the best of those we have". |
| | August, 26 | **Edinburgh** | George III | **Bridge Committee Minute**: it is officially decided that **Plan n° 4** has "the most Merit and that the Author |

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| | | | | of it is entitled to the Praemium". However, it stresses that "they do not find that the said Plan has so much Merit as to be adopted as the Plan to be carried out into Execution". It will be, thus, used as working material. **Architect: James Craig.** |
| | August | **Edinburgh** | George III | **Map of Edinburgh** with sketches of three different versions of a town-planning project for the New Town (Stuart Harris, "New Light on the First New Town", according to this author, the first sketch represents James Craig's original plan). **Author: John Laurie** |
| | October, 6 | **Edinburgh** | George III | **Town Council Minute:** "Committee named to meet on all Improvements on the fields to the North of the City" |
| | October, 22 | **Edinburgh** | George III | **Bridge Committee Minute:** refers to "the Plan of the New Town and Improvements on the north of the City" being designed by **William Mylne.** |
| | October, 29 | **Edinburgh** | George III | **Bridge Committee Minute: William Mylne's plan** is ready to be examined. |
| | December, 10 | **Edinburgh** | George III | **Bridge Committee Minute:** "There was produced two Plans in different Views, made out by James Craig, of the proposed Improvements, with a plan of Common Shores [sewers], which was Remitted to the same Committee, to whom Convener Mylne's Plan was remitted". |
| 1767 | | **Lisbon** | D. José I | Begins the construction of **the *Santo António da Sé* Church.** |
| | | **London** | George III | **Act**: regulating the paving, cleaning and lighting of the City; Mayor, commonalty and citizens to appoint a **Commission of Sewers** to be responsible for these tasks. |
| | April | **Edinburgh** | George III | **James Craig** becomes Burgess and Guild Brother as a reward for his plan. |
| | May, 20 | **Edinburgh** | George III | **Act of Parliament**: "for Extending the Royalty of the City of Edinburgh, over certain adjoining Lands; and for giving Powers to the magistrates of Edinburgh, for the Benefit of the said City; and to enable his Majesty to |

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| | | | | grant Letters Patent for establishing a Theatre in the City of Edinburgh, or suburbs thereof". |
| | June | **Edinburgh** | George III | **James Craig** receives a gold medal and the Freedom of the city in a silver box. |
| | June, 24 | **Edinburgh** | George III | **Town Council Minute:** refers to the appointment of "a small Copmmittee to settle the Plans of the new Buildings and to feu out the grounds". |
| | July, 29 | **Edinburgh** | George III | **Town Council Minute:** "Act Assent setting the Plan of the New Buildings and for feuing out the grounds on the North of the City". **Officially adopts the plan for the New Town**: " the Committee after many meetings and consulting with Lord Kaims, Lord Alemour, Commissioner Clerk and Mr Adams and other persons of skill in these matters had reviewed all the former Plans with the greatest care and attention and considered several amendments proposed by Mr. Craig, and that Mr. Craig by their direction had made out a new plan, which Plan signed by the Lord Provost of this date was produced". **Also discusses the feuing of the plots for the new buildings.** |
| | July | **Edinburgh** | George III | **Feuing Plan for the New Town. Architect:** attributed to **James Craig** |
| | October, 14 | **Edinburgh** | George III | **Town Council Minute**: "Act relative to the executing the common sewers in the New Town – and Mr Craig's going to London to learn every thing relative to sewers & would ask nothing but a small sum for his expenses". |
| | October, 25 | **Edinburgh** | George III | **Bridge Committee Minute**: David Henderson's sewer plan is selected. |
| | December, 23 | **Edinburgh** | George III | **Town Council Minute:** letter by John Pringle regarding the inscription of the adopted plan and the New Town streets' names. |
| **1768** | | **Lisbon** | D. José I | **Manuel da Maia** dies (born in 1677) and begins the construction of the ***S. Paulo*** **Church**. |
| **1769** | March, 6 | **Lisbon** | D. José I | **Decree**: ordering the sale of some proprieties on the ***Rua Augusta*** in |

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| | | | | order to speed up the rebuilding. |
| 1770 | January, 1 | **Lisbon** | D. José I | **Reinaldo Manuel** is appointed director of the ***Casa do Risco***. |
| | | **London** | George III | **Statute**: reinforcing and extending the powers and proceedings with regard to the resolutions of the Act of 1767. |
| | | **London** | George III | **Act**: reinforcing and amending building specifications for bricks and tiles. |
| 1771 | February, 23 | **Lisbon** | D. José I | **Charter**: ordering the sale of still ruined. |
| | December, 23 | **Lisbon** | D. José I | **Charter**: giving only permission to work to the building craftsmen graduated in the ***Aula de Desenho da Fábrica das Sedas*** **(Drawing Class of the Silk Factory).** |
| 1772 | December, 7 | **Lisbon** | D. José I | **Charter**: ordering the sale of ruined buildings to anyone willing to build. |
| | | **London** | George III | **Act**: amending the building regulation, e.g. party walls and other anti-fire precautions, within **the cities of London and Westminster, Saint Marylebone, Paddington, Saint Luke in Chelsea and the County of Middlesex.** |
| 1773 | | **Lisbon** | D. José I | Opening of the ***Praça da Alegria*** **(Alegria Square).** |
| 1773/1822 | June, 27 | **Edinburgh** | George III | Begins the construction of the **General Register House. Architect: Robert Adam.** Completed in 1822 by **Robert Reid**. |
| 1774 | | **Lisbon** | D. José I | Inauguration of the new **City Council Chambers**. |
| | | **London** | George III | **Act:** the first major legal building venture after the Act of 1667. Division of the buildings in several rates with specific building norms, according to the areas and cost. Objectives: prevention of fire, avoiding of obstructions and defective structures. It allowed a more flexible control of street width and building height and was effective up until 1845. |
| | | **Edinburgh** | George III | **Plan introducing a circus in the New Town. Architect: James Craig.** |
| 1775 | June, 6 | **Lisbon** | D. José I | Inauguration of **king D. José I Equestrian Statue** on the ***Praça do*** |

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| | | | | ***Comércio* (Commerce Square).** |
| | November, 23 | **Lisbon** | D. José I | **Decree**: ordering the building of the ***Praça da Figueira* (*Figueira* Square).** |
| 1777 | | **Lisbon** | D. Maria I | The Marquis of Pombal is forced to retire from his political assignment and the rebuilding works are brought to a standstill. |
| 1786 | | **Edinburgh** | George III | **A Plan for Improving the City of Edinburgh. Architect: James Craig.** |
| 1791 | August, 24 | **Edinburgh** | George III | **Town Council Minute:** orders the feuing of Charlotte Square. **Robert Adam** is appointed to design a uniform architectural scheme. |